

INTRODUCTION

TO THE

**PROJECT METHOD**

A Course of Lessons for Normal Training Schools.

PREPARED BY

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FOR THE

PUNJAB TEXT-BOOK COMMITTEE, LAHORE.

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## PREFACE.

It is a great privilege to have been invited by my friend, the Rev. A. E. Harper, to write a short preface to this valuable little book ; and I respond to his invitation with much pleasure.

Mr. Kilpatrick has written about the actual teaching at Moga, how it has an immediate connection with life, how the curriculum meets the demands of the children, how the school work of the children is of vital interest to them. I shall not therefore traverse the same ground, especially as it has already been traversed by one of the greatest authorities in the world in this particular matter.

I shall, therefore, confine myself to a few impressions which I have gained as a result of constant visits to Moga during the time when I held the post of Director of Public Instruction in the Punjab. When I took over charge of that office, the Punjab had just begun to realise the vital importance of adjusting its scheme

of rural education to rural requirements. By the efforts of my distinguished predecessor, the late Mr. J. A. Richey, a start had been made by attaching to a number of vernacular middle schools school-farms, in which the pupils would do the manual labour and thus keep touch with their ancestral callings. But the important point in the scheme was that the pupils were not thereby being trained to become farmers. Far more important, they were being taught their ordinary school subjects through the medium of agriculture ; in other words, through the medium of matters in which they were intimately concerned in their everyday lives ; and their lessons were illustrated by reference to topics which had a real significance to them. This, then, was an important beginning.

But Mr. Ray Carter, Mr. McKee, and, in turn, Mr. (and I would add Mrs.) Harper have gone much further. They have now for many years made the training class of teachers the pivot of their work. The teachers who have had the opportunity of receiving their training at Moga have learnt to teach

by the methods which Mr. Kilpatrick has described, and also (even more important) in accordance with the spirit and tradition of Moga. Thus, they have been trained in a spirit of service to the community in the places in which they will serve. The Moga teacher, therefore, is not merely a good teacher of a village school ; he is far more than that. By virtue of the training that he has received, he should be the prop and stay of the community with which he will become associated.

Another point which has impressed me in my many visits to Moga is that Mr. Harper, like every good head of an institution, is never satisfied. He fully realises that only a start has been made in this noble work of assisting in the reconstruction of the village communities of the Punjab. He is ever on the look-out for new ground in which to work. First, the farm ; then, the new and better methods of teaching ; then, the village crafts ; then, the village teachers' journal ; then, the dispensing for all who need relief, whether they be village visitors or those connected with the

school ; and there are countless other activities which impressed me at the time, but which I do not recall at the moment. What, however, has impressed me most has been the spirit of unity which pervades the whole institution. All are filled with an earnest desire to serve their fellowmen, especially those whose lot is cast in small villages.

Moga is, therefore, the centre of a great and a living experiment—an experiment which has already proved its worth in a large degree. It is as the little grain of mustard seed, which has already begun to sprout and to stretch its branches over the whole of the Punjab ; indeed, over the whole of India and, it may be, beyond the seas. In his delightful humility Mr. Harper is not aware of this ; but others, like myself, who have had ample opportunities of appreciating the growth of the Moga seed, can testify to the fact that the tree is growing well and gradually, and is not being weakened by luxuriant and ineffective foliage.

When I left India two years ago, I thought, with sadness, that my life in India

was at an end. It is a real joy to me to have returned to meet old friends, and to visit much-beloved educational institutions. But there is no institution which I shall re-visit with greater joy and thankfulness than Moga.

G. ANDERSON,  
*formerly Director of Public  
Instruction, Punjab.*

*November 14, 1932.*



## FOREWORD.

It is a pleasure to say a word of introduction for this book prepared by Mr. Harper for use in the Government Normal Schools of India and for Refresher Courses for teachers in service.

Education in our schools the world over, including also those in India, runs the risk of a remoteness from life, an overloading of curriculum and a dry formalism of method, very different from what is needed, if education is to render its best social service.

The work at Moga stands in striking contrast to all this. Instead of remoteness from life it has immediate connection with life. Instead of an overloaded curriculum it has a curriculum made as it is needed to fit the demands of the children as they in turn fit life. Instead of a dry formalism of method, there is a most vital interest of the pupils in what they do so that educative conditions are at the best. I shall never forget what I saw and heard from the children there. Would

that the rural schools of America could consent to learn from what is there to be found. The advantage would be great.

In India, as elsewhere in the world, there is widespread need for teachers and normal students to change fundamentally their thinking as to the character and function of education and their attitude toward children. The project method, as worked out at Moga and described in this book, illustrates the needed reconstruction of view. It has in it a vital touch with life about it, the same sort of touch that I am told the ancient Indian education had with its civilization. As I have studied the rural school situation of India, this method seems to me to hold out the best promise of hope for national progress in a fitting philosophy of method. I am glad then to commend this book as serving to help in the reconstruction of view and in bringing education more vitally in touch with the needs of a growing India.

WILLIAM H. KILPATRICK,  
Teachers' College, Columbia University,  
New York City.



## INTRODUCTORY NOTES.

This volume has been compiled as a textbook for Normal schools, for teachers' refresher courses, and for the use of teachers out in service. The book is very elementary in its exposition of the project method of teaching. The scientific basis of the principles treated and their application to the technique of teaching are found in modern educational psychology; but their adaptation to teaching under the conditions of Indian schools has largely grown out of personal experience.

The plan of the book covers a short intensive course for training institutions. The lessons may extend over a period of three to five months. Every lesson should be supplemented by intelligent, sympathetic observation of actual teaching, and also by practice in the school-room. Every pupil-teacher should individually carry out both observation and practice of teaching. The purpose of the questions at the beginning of each chapter is to suggest lines of thought introductory to the lesson. The section "To Do" at the end of the chapter suggests

activities for the teachers in training based on the material in the lesson. The teacher in service will also find it profitable to study this book systematically, carrying out the observation and practice in the same manner.

This book was first undertaken because of a request from the Deputy Directress, Punjab, Miss L. M. Stratford, for material for training women teachers. I have kept this need in mind, and have included a number of illustrations from schools for girls. But as the principles and technique of the project method are the same for all pupils, and as I am writing from my experience with a boys' school, the course should be found equally helpful in training men and women teachers.

I acknowledge with gratitude my debt to William H. Kilpatrick, Ph. D., Professor of Education at Teachers' College, Columbia University, New York, to whom I owe not only my first introduction to these principles, in his classes, and further guidance through his books, but also the stimulus and help of his continued and kindly interest in our work.

I have been influenced much through reading accounts of the work of an English educationalist, Sanderson of Oundle, who, though not using the term project method, was constantly applying similar principles to the quite different situation of a Public School. I have quoted him in a number of cases. Space forbids my listing elementary schools in Great Britain, the Continent, and America, that are using successfully the Play Way and other creative methods based on these principles of progressive education. The New Era Magazine will be found helpful for accounts of such work.

In India there are an increasing number of schools, both rural and urban, which are experimenting with these new methods. I have given illustrations of the work of as many as I could learn about. Because of my lack of personal knowledge of other schools, and the meagre printed matter about their methods, I have been obliged to draw many of my illustrations from our experience in the Training School for Village Teachers, Moga.

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Experiments with new methods at this school could not have been carried out without the encouragement and assistance of the Department of Education, Punjab, over a long term of years. The present Director, R. Sanderson, Esq., M.A., has given generously of his advice and help. My gratitude is very real to Sir George Anderson, M.A., Kt., C.I.E., who was Director of Public Instruction, Punjab, during most of the years of Moga's development, for his strong backing of our experiment. I feel greatly honoured by his willingness to contribute the Preface to this little book.

This book could never have been written without the constant and able assistance and inspiration of my best helper — my wife. In this book, as well as in all of my work, her contribution is immeasurable.

A. E. HARPER.

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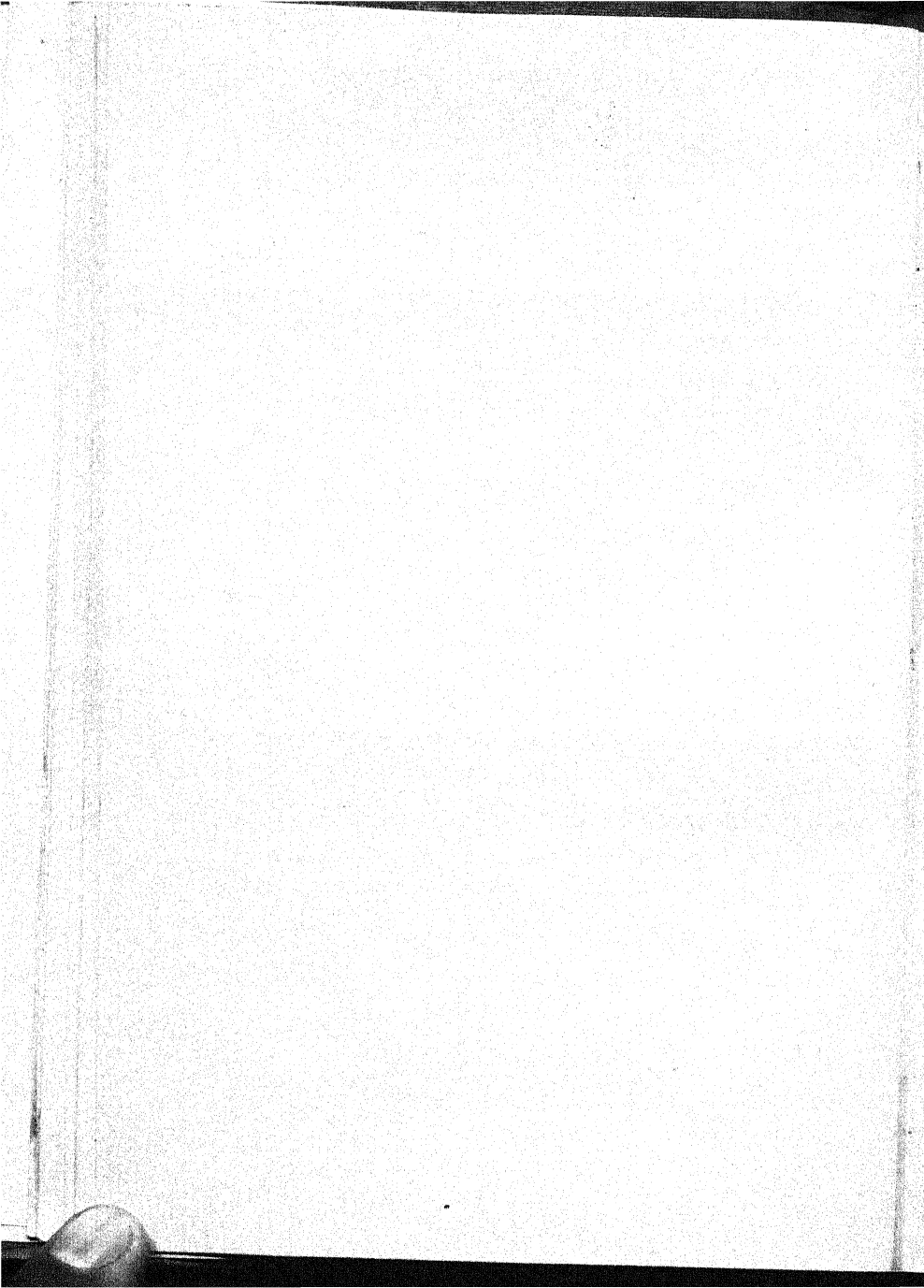
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## ERRATA.

- On page 4, line 10 *after knowledge* a comma.  
 On page 14, line 4 of text, for *an* read *and*.  
 On page 19, insert Chapter V.  
 On page 20, line 21, *after teaching* add *him*.  
 On page 26, line 12, for *lesson* read *lessons*.  
 On page 34, after line 4, *division and space*.  
 On page 44, line 2, for *masters* read *matters*.  
 On page 52, after line 7, *division and space*.  
 On page 62, after line 18, *division and space*.  
 On page 72, footnote, for *adopt* read *adapt*.  
 On page 85, line 17, for *hospitals* read  
*hostels*.  
 On page 98, line 20, for *price* read *piece*.  
 On page 135, line 1, for *be* read *become*.  
 On page 173, bottom line, for *of* read *for*.  
 On page 174, line 8, for 750% read 75%.  
 On page 177, line 5, for *in* read *of*.  
 On page 177, line 25, *before For* insert (b).

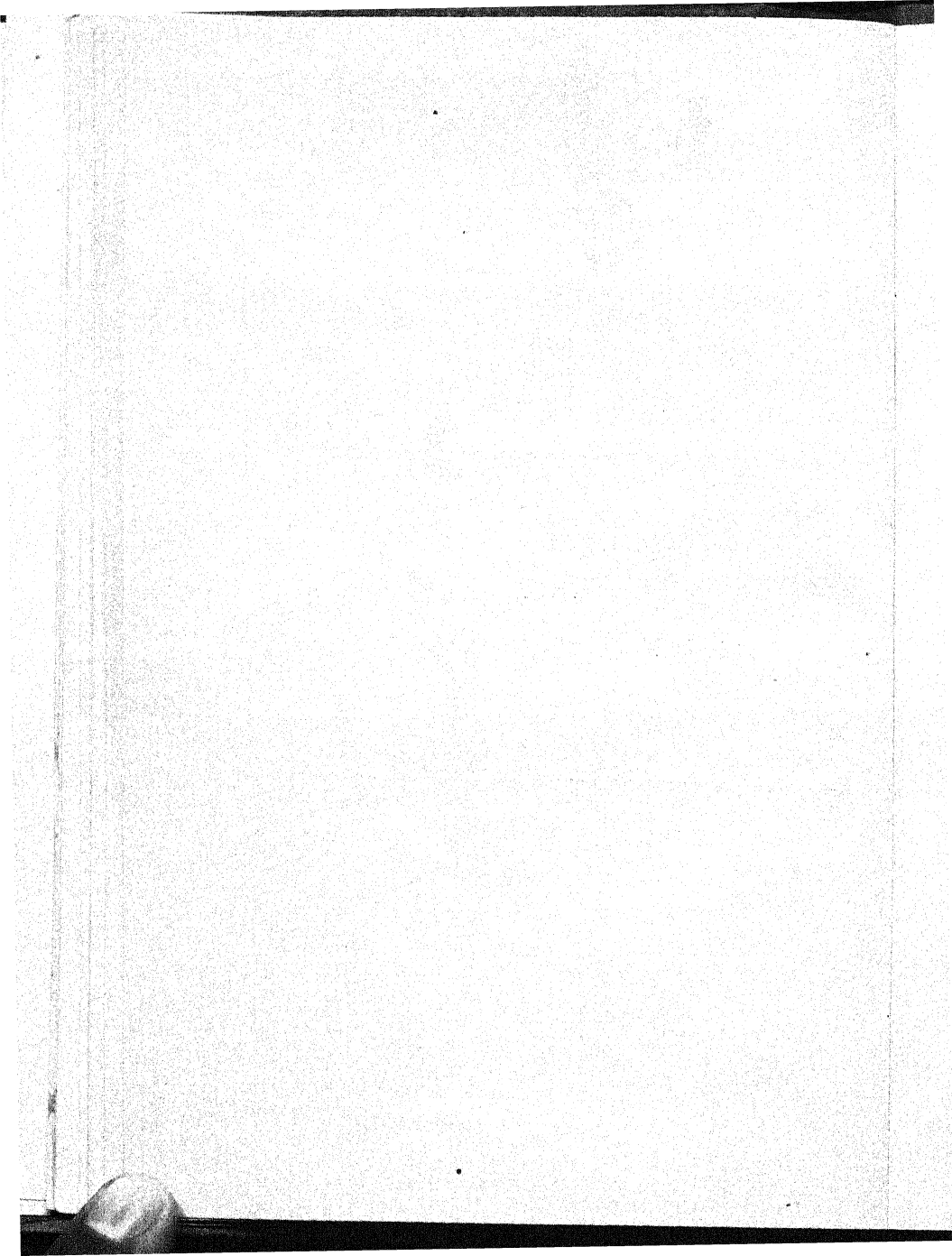




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**PART I.**  
**SOME FUNDAMENTALS.**

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## CHAPTER I.

### *To Think About.*

Of all the school-book material which you have memorized in your life-time, how much do you still remember ?

Think of some piece of knowledge you acquired yourself by your own search. Is that clearer in your mind than the knowledge you gained as a daily lesson from a text-book ?

What would become of a plant that was flooded with water and smothered with fertilizer each day ?

### WHAT IS TEACHING ?

India has always honoured the teacher, and we are proud to say that our work is that of teaching. But what do we mean by teaching ? Let us consider this for a little. If we are going to talk about methods of teaching, we must first think together on what it means to be a teacher.

Many think of the teacher's work as mainly the daily task of hearing pupils recite what has been committed to memory. The

teacher assigns certain passages from the text-books to be learnt, the facts studied, etc., and the next day these must be repeated from memory to the teacher. The success of the teacher is measured by his or her ability to keep the class orderly and quiet so that each pupil may store in his mind as much new information as possible from the prescribed course of study.

In such a school the pupils are like water jars (*gharas*) and the teacher is a water-carrier. Each day the pupils sit in their places like a row of jars, and each day the teacher pours in as much new information as the brains can or are willing to take in. The hope of this process is that at examination time sufficient information will still be retained in each brain to enable the pupil to answer the questions set.

What relation has such teaching to real life? To how many in real life can success be measured by the ability to learn facts one day and repeat them the next? How useful is a large body of facts? In real life, thinking and reasoning power, initiative, sense of responsibility, honesty, ability to co-operate and reliable habits of efficiency and accuracy are

the characteristics that make for success. If this is so, must not the true teacher be developing these qualities in his pupils? Does mere memorization and reciting learned facts accomplish this result?

The work of the teacher is really, then, the task of developing the capacity of each child, rather than pouring in information. It is a process of guiding pupils so that they will seek and find, not of compelling them to take. A teacher is more like a gardener who tends each plant, gives water and sees that plenty of plant food is available in the soil so that the plant may take its own nourishment. He daily works the soil to keep it soft. He moves the plant into the sunshine and protects it from the extremes of cold and heat. He ties up the broken branches, plucking off its dead leaves. In time the plant, making the best use of all available resources, comes to full bloom, beauty and fruit.

This is a symbol of the work of a true teacher. He should be more concerned about how the pupils think than about how much they can cram into their minds, more anxious about how much they can grow in observation and how much knowledge they have made

their own through their own search and study, than about how many pages of text-books they have memorized. He will eagerly watch to see how much initiative and sense of responsibility they are developing, rather than how quietly they sit in class and how seldom they claim the teacher's attention.

The teacher should be a guide, a helper, a friend, a big brother or sister, a companion in the search for knowledge not a commander and assigner of the task, a listener to the recitation of memorized passages. The classroom will then become a place of life where the pupils are best preparing for life because they are living most fully each day.

#### *To Do.*

Visit any class you choose for the purpose of observation. During one full period, write down all the questions the *pupils ask* of the teacher. Also note *how many questions* the teacher asks.

After the class, compare the number of questions asked by the teacher with the number asked by the pupils. Do any of the questions asked by the pupils show that they are interested in their lesson and really thinking about it ?

## CHAPTER II.

*To Think About.*

How does a doctor learn to treat disease? What foundation subjects does he have to study?

How does a mechanic learn to repair machines?

## LEARNING TO TEACH.

We can become good teachers by effort. All teachers need study and training, not only in the years of preparation for teaching, but also during the years of experience. The true teacher wants constantly to improve. He strives to give up the habits of poor teaching described in Chapter I. He tries to become a friendly guide instead of a task master. What is necessary, then, in order to become a teacher who guides and develops each pupil to the fullest capacity?

Most of us at first think that we can become successful teachers by learning many devices and detailed steps of teaching the various subjects of the course of study. We go to a Normal school and try to acquire all the special methods of teaching arithmetic, history, reading, etc. These we copy into our note-books

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and fix them in our memory. The more devices we learn and the more lesson plans we outline, the more successful we think we shall be in instructing children.

But is this method getting at the real foundation of successful teaching ? Will it teach us how to be guides and developers of children? The answer may be made clear by an illustration.

I have a motor-car which needs repairing. Should I entrust this to a motor mechanic who has learned about motors only from books ? He may be able to recite from memory the various steps in a repairing process. He may be able to name parts of the machine and tell where and how it was made. He may be able to tell what repairs should be made in the case of certain accidents. But I do not care for all of this book knowledge of processes. I want to know whether he really understands how the machinery works. Does he know what goes on inside the engine ? Does he know from the sound or the look or the feel of it whether it is running right or not ? Does he know from his experience where to look for the trouble if it is not running right ? It is not a question of learning devices or committing plans to

memory. It is the knowledge of what actually takes place within machines, that seems so complicated to the uninitiated but so natural and understandable to the person who knows.

Consider now the case of a doctor. You do not want a doctor to care for you who has merely learned a number of prescriptions and memorized different forms of treatment. The doctor must know the whole body, how the organs work and how certain drugs affect these organs. We want a doctor to make a thorough diagnosis of a case and then prescribe a treatment that will right the wrong condition.

Teaching likewise requires that the teacher study the child. The teacher must understand how the child reacts to certain situations. He must know the effect of the environment on the child. He must be familiar with the processes of the child's mind. He needs to understand the laws of learning that are operative in the learning process.

The study of special methods, with their formal steps and devices, is not so important in learning to teach as is the study of how children learn. If we can discover how the children's minds work, we shall be able to determine the most effective way of teaching

them. If we are able to find a new and more effective approach to the child, we can use this *new approach* in all kinds of teaching. The fundamental principles of this new kind of teaching we shall try to discover in the following three chapters.

*To Do.*

Observe in a Primary class for one period. Answer these questions about the teacher :—

Does he show evidence of understanding the children ? Is he interested in what children say ? Does he want to know their opinions ? Is he quick to see if they do not understand ? Is he sympathetic with the children's point of view ?

## CHAPTER III.

*To Think About.*

Is the mental process of learning a new word any different from learning to drive a motor-car ?

Can you learn something that you desire to learn, more quickly than something you are just ordered to learn by another person ?

If you had just eaten one big meal could you at once eat another big meal even if it were served to you in gold and silver dishes in a king's palace ?

## HOW CHILDREN LEARN.

Our first purpose, then, is to make a study of the process of learning.

What do we mean when we say we have learned a word, a fact or a process ? How do we learn ? Psychologists have given the most profound study to this problem, and we as teachers are fortunate indeed to live in these modern days when so much has been found out about the learning process. If we are to be successful teachers we must become acquainted with some of these facts that have been discovered, and we must make use of them. It

makes no difference what is to be taught, whether it is simple arithmetic or college algebra, beginning reading or driving an aeroplane, the same laws are at work and must be obeyed to insure success.

To know these laws, Psychology should be studied, and especially that branch of the science called Educational Psychology. Some of the conclusions of educational psychology most practically useful for teachers have been set forth very clearly and wisely in a little book called *How We Learn*.<sup>\*</sup> This book should be studied by every teacher. It is the indispensable foundation for understanding the Project Method. Just now, because of limitation of space, I can give in this and the following two chapters only a very brief statement of some of the conditions of learning. This is merely a summary of Dr. Kilpatrick's explanation of these laws.

First, there are three laws of learning which the teacher should understand and use :—

I. The Law of Exercise. "*We learn what we practise. We do not learn what we do not practise.*"<sup>†</sup>

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<sup>\*</sup> *How We learn*—Dr. W. H. Kilpatrick, Association Press, Calcutta. Urdu edition is *Husul-i-T'alim ke Usul*, R. S. M. Gulab Singh & Sons, Lahore.

<sup>†</sup> *How We Learn*—pp. 6—9. *Husul-i-T'alim ke Usul*, pp. 10—18.

This law seems to be very simple, but most schools do not apply it in teaching. We are ready to agree that we learn arithmetic by doing arithmetic, not by memorizing rules, but we do not realize that the way to learn accuracy in counting and making change is to use actual money and do these things really in school. We learn hygiene when we daily *practise* health habits. A pupil does not learn to make decisions unless he practises making decisions. If we wish our pupils to be able to learn to figure accurately, to understand and care for their bodies, to think effectively, then we must place them in situations where they are constantly called upon to practise these useful habits. In order to make use of this law, it is necessary to teach through practice in life situations.

II. The Law of Effect. "*We learn to do the ways that bring success and satisfaction; we learn not to do the ways that bring failure and annoyance.*" We have not space to explain or prove this law here. You must study it in *How We Learn*.<sup>\*</sup> Psychologists have proved through many experiments that

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<sup>\*</sup> *How We Learn*—pp. 10—15. *Husul-i-T'alim ke Usul*, pp. 19—34.

we learn best when a feeling of success and satisfaction accompanies our work, and that a feeling of failure and annoyance builds up opposition and inhibits learning. Most schools do not observe this law in their teaching. They consider that the child's will must be broken, that what the child dislikes is the best thing for it, and that compulsion is a necessary part of good teaching. This is contrary to the conclusions of educational psychology which tells us that the most efficient learning is dependent on success and satisfaction. The teacher must study and use this law in teaching if he wishes the quickest and most permanent learning to take place.

III. The Law of Readiness. "*When we are ready to act along a certain line, acting gives satisfaction, but being prevented from acting gives annoyance. When we are not ready to act, being forced to act also gives annoyance.*" This law is also fully explained in "*How We Learn.*"\* The failure of many teachers to catch and hold the interest of the pupils is due to their ignorance of this law. It is simple when understood and must be daily practised.

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\* *How We Learn*—pp. 16—18. *Husul-i-T'ālim ke Usul*, pp. 35—41.



Pupils can be as much ready or unready for certain studies or school work as they are ready or unready to eat at certain times. A wise use of time and choice of work to be done, and the preparation of the pupils for the work, are all conducive to good results in teaching. The project method makes the fullest use of this law.

These laws are not for the purpose of sugar-coating learning so that it goes down more easily. Instead they show the way the child's mind acts, and you must follow these laws of learning if you want to get the best results in your teaching.

*To Do.*

Find out from the book 'How We Learn' just how people's minds act when they learn something.

Read from the same book the explanations and illustrations of the three laws of learning referred to in this chapter.

## CHAPTER IV.

*To Think About.*

Try to remember some time in your life when you have wanted very much to accomplish a certain purpose. Did you have to learn something new in order to attain your object? Did you have to do some hard piece of work? How did you feel about this required learning and required work? Were you more willing to do it than you were to learn tasks set by your teacher in which you were not interested?

## DESIRING TO LEARN.

We have seen from the laws of learning developed in the last chapter that children learn most quickly when they practise something which has engaged their attention and interest. The act of learning should be attended with a feeling of satisfaction and pleasure. The most skillful teaching is that which follows the lines of the child's interest and his readiness to learn.

Hotchkiss says, "Learning takes place most economically and effectively where the drive or propelling power is within the

child." Let us follow out this idea in a little more detail, and see if we can discover why it is so.\*

When a child has set his mind on accomplishing a certain thing, he will meet and overcome many difficulties in his way. If the purpose to make, for instance, a kite, or to dress a doll or get up a drama, is, or becomes, fully his own, his whole mind, soul and body will be set on it. He will be ready to take an interest in anything that helps him on with his purpose and unready for anything that thwarts or hinders him.

Consider the case of a group of boys wishing to make kites. They are ready to study wood to find out which is best, lightest, yet strong enough for kites. They will measure very carefully, cut the strips of wood most accurately, balance one piece with another for weight. They are ready to read anything that will help them make better kites. A trip to the bazaar for samples of paper or a search through books for designs or patterns is all fascinating pleasure. Calculation of cost of paper and string or planning how the money is to be earned for these things gets

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\* Excellent illustrations are given in "How We Learn," Kilpatrick, pp. 19-26. Hasul-i-T'alim ke Usul, pp. 42-61.

their attention at once. But they are unready for a jolly game of ball or hearing a funny story or even for a motor trip unless these have a relation to their purpose of kite-making. If they understand that the game of ball will give them relaxation that will enable them to design and prepare their kites better, the game takes on a different significance. If the funny story is about a boy and his kite they are ready for it. The same applies through the whole process of selection of string, ground glass preparations, etc. There is a mind-set for kite making.

A girl who sets her mind on dressing a doll is ready for every activity that helps on her purpose. The study of cloth, designing of dresses, practice with scissors, needle and thread are entered into with zest because they carry on her purpose. We may say that the strength of mind-set can be measured by the amount of difficulty the person is ready to overcome to accomplish his or her purpose.

But suppose the dressing of the doll is merely done because it is ordered by the teacher as a part of the Government course requirements. The child is ordered to give a specified number of periods daily to this

until the work is accomplished. Failure to finish a certain amount each day is punishable. Each night a certain amount of work on it must be done as home work. An examination at the end is to be given and each pupil's work graded. The pupil has not made this her purpose, she is following out the teacher's or the Government Inspector's purpose. She is doing an assigned task. Her desire not to be punished and not to be laughed at by teacher and class as a fool, stimulates her some, but her mind and body and soul will not be in it, for her own interest will be connected with something she is making or doing for herself out of school. She finds ready excuses for anything that hinders her work on the doll's dress, and she leaves it as soon as possible to do the thing her mind is set on.

This mind-set or strong desire is very important for effective learning. I think you will agree that in the average school learning is not re-inforced by mind-set. Usually the pupils' strong desires are directed to something they are doing outside of school. The teacher who connects learning with the pupils' interests and desires has more success. Whenever "mind-set" is thus enlisted, the teaching has more chance of being successful.

A good test for mind-set is to see what pupils do when left to themselves. I have seen schools where as soon as the teacher is called out of the class room, the pupils begin to make grimaces, pinch one another and kick one another. I have seen another school, where, as soon as the teacher is called out, the pupils make use of this as an opportunity to carry on the activities they have planned : some of them search for a book that will give desired information, some estimate costs, others continue their writing which describes the class enterprise. In both schools the teacher's absence afforded an opportunity for the pupils to do what they *wanted* to do. In one case what they desired was to be relieved of the teacher's compulsion and have some fun. In the other what they desired was to carry out their class project.

### *To Do.*

Watch a Middle class (Fifth, Sixth, or Seventh) during an entire period. If the class is large, choose a small group to look at. List everything the pupils do.

Are they interested in their work ? Why or why not ?

*To Think About.*

Remember your experiences in learning any subject (history, mathematics, reading) in school. What was your attitude towards your teacher?

What good habits did you learn through studying that subject? What bad habits did you learn?

## ATTENDANT LEARNINGS.

We have been finding out that children learn best when they have a strong purpose or mind-set. When this strong purpose controls the study, the child's whole nature is concentrated on the act of learning. But this concentration is seldom seen in school. Most children in school are only giving a half or less of their full attention to the lesson being learned. The rest of their attention is wandering to various other interests that they really prefer to the required lesson.—

The fact that the lesson is not engaging all the powers of the child is seldom noticed by the teacher. Most teachers feel the responsibility for the reading or arithmetic which the child is learning, but pay no attention to the

other things he is learning. They do not realize that no one learns just one thing at a time. A pupil who is studying one thing is always learning other things at the same time. And often these other learnings—attendant learnings—are more important than the lesson itself.

Take the teaching of reading as an example. A boy sits in class. He is learning reading by the alphabet method. Day after day, for an hour or more, he repeats meaningless letters and syllables. The teacher says he is teaching the child to read. Now reading is the act of deriving meaning from a written or printed page. Is the pupil doing this? Is he not rather doing what a friend of mine called "barking at print"?

But even granting that the pupil is doing something, which if continued long enough and persevered in, will be of some use in teaching how to read, we must ask a further question, "What *else* is the pupil learning as he sits repeating these letters and syllables for so many weeks or months?" Is he not learning a distaste for reading by associating this meaningless process with books? Will he not, all his life, attach the idea of reading to set tasks and



unpleasant work ? Is this not one reason why educators in India say that so few pupils enjoy reading or read much except what is required by their course ?

What about this pupil's attitude toward school work in general ? Is he not learning that school is a tiresome place from which he longs for release ? Does he not look forward eagerly to the time when he can enjoy life outside of school ? What about his habits of alertness and thinking ? Is not this meaningless repetition teaching him *not* to think, and to be lazy in his mental processes ? What of his attitude toward his teacher ? Is he learning to think of his teacher as a friend, one who has brought happiness and new rich meanings into his life ? Is his teacher one who understands him and helps him to live with satisfaction and growth ?

Consider, on the other hand, the effect of beginning reading lessons with the story method or other methods in which the very first lesson in reading is associated with pleasure and awakens keen interest in the pupils. The pupils begin to read the first day. This awakens a strong sense of satisfaction and accomplishment. The story or other material

used is of interest to children of that age. The reading period from the first lesson is fascinatingly interesting to the child. The print has meaning to him. In six months he has read several stories. He has a vocabulary of some 150 common words which he can recognize wherever he sees them. Besides this he can spell out and pronounce almost any simple word he sees.

What has the boy learned in addition to the primary learning of some of the skill of reading ? Has he not learned to associate school with pleasure and reading with a feeling of success and delight ? Will he not wish to read whenever opportunity is afforded, and will not the very sight and feel of books as well as the reading of them bring a sense of pleasure ?

What of his habits of thinking ? What of his attitude toward his teacher who has brought so much pleasurable meaning into his life ? What of the possibility of keeping this boy in school for a number of years instead of losing him as we do so many in the first year of school ? Many schools teach children *how* to read but do not teach them *to read*.

Dr. Kilpatrick gives the name "primary learnings" to "all those learnings that belong closely to the enterprise immediately under consideration"—*e.g.*, the skill of learning to read in the above illustration. But he calls "attendant learning" all those that have to do with attitude and habits that have a reflex effect on the pupil's life, outlook or behaviour. Learning is never single. Many things are always learned at one time.\*

You can see how this applies in all the lessons of the course of study. Pupils are learning to like or dislike nature study in their daily lesson. They are forming habits of laziness or industry in their arithmetic lesson. The hygiene lesson learned by committing to memory so many pages of a text book is not building health habits and a right attitude toward health into the lives of the pupils.

All schools give attention to the primary learnings, but most give too little consideration to the attendant learnings. And yet in real life the attendant learnings are of more importance than the primary. Should they not also be considered most important in school?

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\* See "How We Learn", pp. 27—30. *Husul-i-T'alim ke Usul*, pp. 70—80.

*To Do*

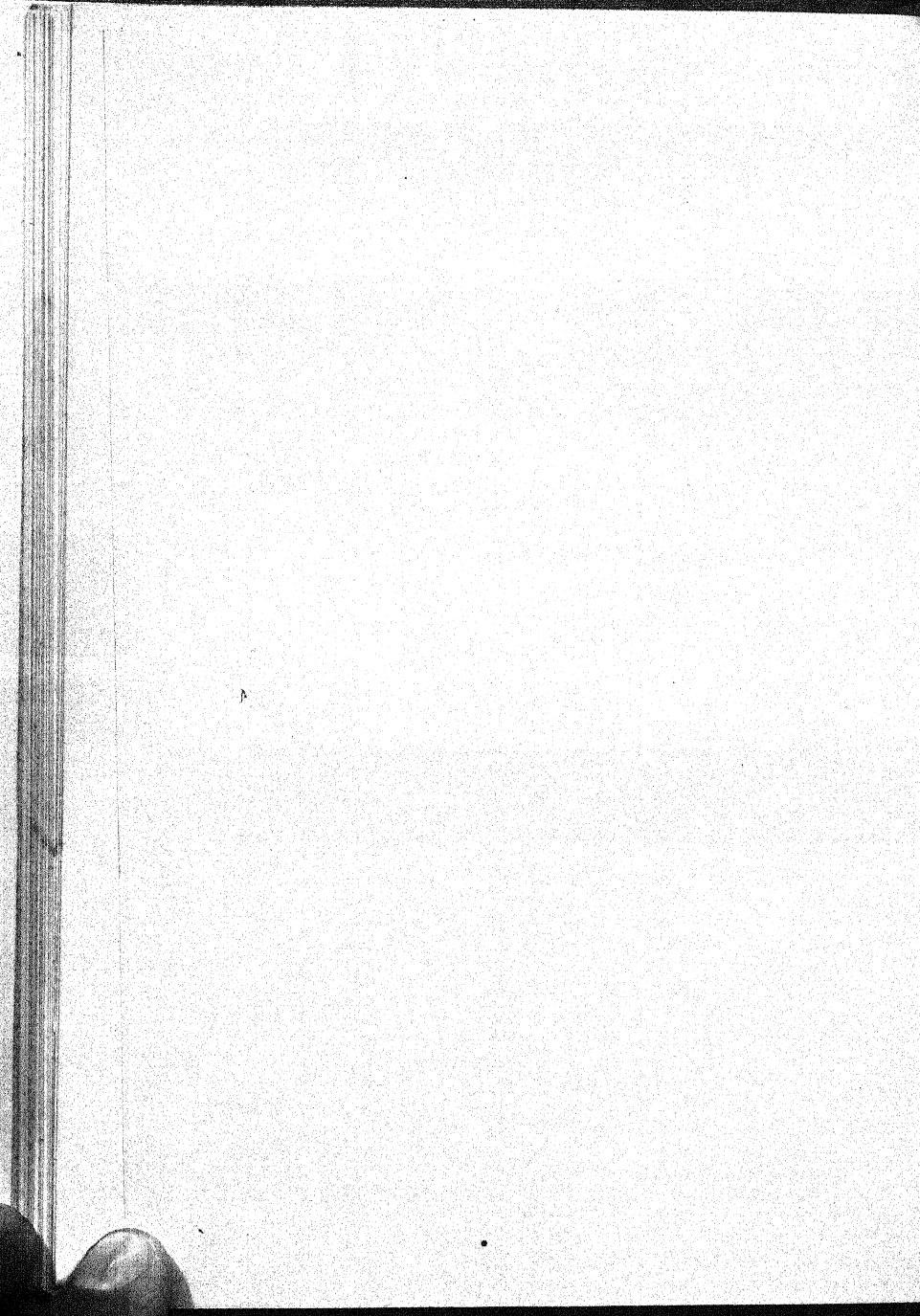
Observe a class learning a poem ; or a new rule in arithmetic.

List all the *attendant learnings* which you think are going on.

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**PART II.**  
**EXAMPLES OF PROJECT TEACHING.**

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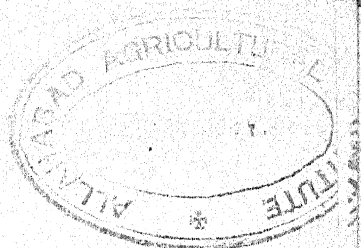
## CHAPTER VI.

*To Think About.*

How does an adult acquire new knowledge? Think of some new skill or information you have learned, as, for instance, how to play badminton, or information on some subject about which you are writing a paper. Who chose this activity, you or some other person? How did you begin to learn? How did you secure help? Now think of a child learning something in school. Contrast the way he learns with the way you learn.

## LEARNING THROUGH EXPERIENCE.

We have been considering how children best learn; and we find that in recent years psychologists have discovered, through painstaking experiments, certain laws that are universally applicable to teaching. These have been formulated so clearly that the average teacher can use them for guidance, in fact the teacher must obey these laws of learning if he is to succeed. Pupils must practise the thing they want to learn. A sense of success and satisfaction must accompany the learning process when the pupils are





learning the right things, and failure and annoyance when they are doing the wrong things. Pupils must be ready for a piece of work if we are to get and hold their interest. Pupils must form strong purposes for the carrying out of the right act that has been decided upon. In all of our teaching we must consider the attendant learnings as well as the primary learnings, for the former are often of equal or more importance than the latter.

In the ordinary school the teacher assigns lesson to be learned from a book. The pupils, after they have learned these lessons, recite them to the teacher. The requirements of the term in the various subjects are divided into units of work that are mastered by the pupils largely because of examinations that later must be passed. You can see that this process does not follow the laws of learning which we have just been studying, and this is the reason for the school's failure to get full pupil co-operation, to enlist the complete interest of the child, to teach the children to think for themselves and to get results in quicker and more permanent learning.

Let us think now how a child, if allowed to be natural, would pursue learning. Suppose



a child, with the help of an older person, chose something he wanted—really wanted—to do, or something he wanted to make, or some place he wanted to see, or some game he wanted to learn. Suppose he did a lot of thinking and planning about how he was to do it. Suppose he carried through the whole plan himself, getting guidance or help from the older person only when obstacles were encountered that were really impossible for the child to overcome himself. Suppose this interest is a visit to some historic place. The boy would read all that he could find in print about the place. He would locate it on the map, and estimate all the details of cost of the journey. He would write letters ahead for arrangements. He would plan the time of leaving, arriving and returning. Thinking would have to be done about the articles he would take with him. The things to be seen and the questions to be asked would have to be listed to get the most educational value possible from the trip. When the trip had been made and enjoyed to the full, the boy would review the whole experience to consider what he had learned. He would judge his plans and arrangements and consider how he could do it better next time.

Suppose again, that a group or a class of girls decide, with the help of an older friend, a guide (the so-called teacher), that they desire to carry out some purpose which they have decided upon. It may be to make some article, or to prepare a drama, or to make a study of a piece of art. As in real life, they consider all the possibilities. They plan, execute and judge results.

In the accomplishment of this purpose a great deal of work must be done by the class. There is scope for individual as well as group activities. Many facts will have to be learned. Much that is learned will have direct relation to the required class-room work. Perhaps a good deal of reading will be required, or much writing. Perhaps arithmetical calculations or history facts will be needed, or the undertaking may be related to hygiene or nature study. But this subject matter is something that grows out of the undertaking decided upon by the pupils, and is not an assignment by the teacher to be learned and recited.

These two activities above described, one, the undertaking of one child, and the other, that of a group, are illustrations of "projects."

In teaching by the "project method" a teacher helps the pupils to undertake some activity which they themselves choose. Projects in the class-room are usually co-operative enterprises. As will be seen later, they may be of several different types.

In actual life we learn by doing. Almost everything in life that we do, by which we grow, we do by the project principle. (We must of course except those acts that become purely mechanical like walking, washing, eating, etc., and those acts that we do in carrying out the orders of some one else). What happens in real life when you wish to prepare to become a teacher, or find a teaching post, or run a farm, learn to drive a motor-car, open and run a bus line between two towns, or bind a book? First you have a need or a want or desire to be fulfilled. Then you determine to fulfil that need or desire. You make plans, and, having selected a plan, you carry it through as well as you can, meeting the difficulties as best you can as they arise in the prosecution of your purpose to its final completion. When the result is achieved or failure has resulted from your plan, you look back and judge the result attained. This is a project as it occurs in real life.

"The Project Method is first of all a *method of living*. Life is full of projects. The moment we face a situation to some extent unwonted, we have the need of making a conscious adjustment ; and we do so with more or less of intelligence, more or less of satisfaction or dissatisfaction, and more or less of perception of what we do, why we do it, whether it succeeds or fails, and the reason for this."\* But children in school are usually deprived of such a stimulus to learning. Adults usually choose and desire their new learning. They pursue their own purposes and judge their own results. The project method puts into the school this natural method of learning. It encourages children to initiate their own purposes, to make plans, and learn from their own successes or failures.

Mr. Sanderson, a great English school-master, in speaking of the education of the future says, "The school will not be a place so much where a boy comes to learn lessons, but a place where he comes to create something. Too much time is often spent in learning about tools without using them. Mathematics, languages and the elements of science are largely tools."†

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\* Brief Guide to the Project Method...Hosie and Chase—page 3

† Sanderson of Oundle—MacMillan—page 268.

The project method can best be understood by observing how it works in the class-room. We shall, therefore, in the next seven chapters, describe various projects which have been worked out in Indian schools. If, in addition to these concrete examples, you need a definition, here is the one given by Dr. Kilpatrick. It is a good one to fix in memory:

*"A project is a unit of whole-hearted purposeful activity, carried on preferably in its natural setting."*

In this method we are putting into a workable philosophy principles that have been used by the best teachers for years. We are fortunate to be living in a day when these principles of successful teaching are being made available to the average teacher.

#### *To Do.*

Revise Chapters I to VI. Read also pp. 40—44 in *How We Learn*. Hasul-i-T'alim ke Usul, pp. 89—101.

## CHAPTER VII.

*To Think About.*

A certain school-girl had just passed her sewing examination. She had made a beautiful hand-sewn *kurta*. Yet she asked for money to pay a *darzi* to make her new every-day *kurta*. When she was persuaded to make it herself, she worked hard, but made many errors and did not complete a really well-made garment.

What was wrong with the teaching of Needlework to that pupil? If the object of the Needlework course was to teach practical sewing, did it accomplish that object? Why not?

## LEARNING CONNECTED WITH LIFE.

The following is an account of an activity carried through by the Third Standard of the M. E. Mission School for Girls, Gonda, United Provinces.

*The Sanitary Village.\**

The Third Standard worked out an interesting project in hygiene by means of which they covered all the requirements for the Hygiene

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\* By permission, from "Projects in Indian Education," Van Doren, Association Press, Calcutta, page 23.

Code—and much in addition—and also had a delightful time in doing it. The activity consisted in constructing a ‘sanitary village’, with its buildings made of the corrugated card-board which comes wrapped around bottles and books, and made excellent ‘roofs.’ One outstanding feature was the ‘public garden’ in the centre of the village. This was to be used as a playground and for general recreation, and was laid out with walks, bordered with flower-pots and trees. The clay water-pots were coloured red by using brick-dust mixed with water ; and an old tooth-brush was used for the paint-brush !

Some of the things which the students learned through this experience were : (1) the necessity for light and air in the homes ; (2) the necessity for exercise ; (3) the proper care of refuse ; (4) the duties of the various officers of a village ; (5) the importance of a sanitary well ; (6) the value of lighted streets in a village ; (7) importance of housing the cattle separately from the families ; (8) the place of a hospital in the village , and something about contagious diseases ; (9) something about rural management and public welfare ; (10) the necessity for education and the place



for the schools, the library and the Press in the village ; (11) the use of good seeds which may be obtained from the Government store-houses.

This account of 'The Sanitary Village' is the first illustration I have chosen to show the advantages of the method of teaching by projects or purposeful activities. It is a typical and simple construction project. In such a project, a class (or individual pupils) choose to construct something. Through carrying out their purpose, they learn much useful knowledge. The story of this class building a sanitary village shows how differently these pupils learned from the way pupils learn in most of our schools.

Education has become increasingly divorced from life. The boy or girl in school spends hours each day learning and repeating material committed to memory from a book about geography or hygiene, without relating the information to the actual life he or she is living. Hygiene, if included at all in the course of daily lessons, seems to the pupil merely so many pages of a text-book to be learnt. Geography is just so many maps to be drawn and so many countries, cities, rivers, etc., to be located on



the map. Arithmetic is memorizing and practising a certain number of processes. The successful pupil is the one who can retain until examination time a sufficient amount of this information.

What a contrast that is to the kind of school work these girls did in their class-room! Their work was related to real life, life in a village, their own village. They were concerned with what could be done to make it a better place in which to live. When they talked about the necessity of light and air in village houses they were not learning so many rules for an examination, or so many pages from a book. They were talking of what their own homes could and should be like. They were thinking of their own health and of reasons for the sickness or death of the little brother or sister they loved.

In such ways this project of hygiene study helped to connect learning with life. The method of teaching by projects is a useful way of preventing the divorce from practical life which is so characteristic of much learning in school. In such a project, geography would be taught through the location on the map of the places from which the best seeds could be

secured for the beautifying of the village, the route and distance and fare for taking a sick member of the family to the Government hospital, etc. Civics would be taught through their interest in the management and improvement of their village.

Sanderson, the Headmaster of Oundle, believed in connecting learning with life. The following quotation from his writings are worth pondering :—

“Schools should be miniature copies of the world we should love to have. Hence our outlook and methods must have these aims in mind. School-masters have great responsibilities.”\*....

“The outlook, values and organisation of a school should be based on the fundamental fact of the community service. By habit of mind, and by the activity of the schools, boys should be imbued with this high duty. It means a reorganization of methods and aims.”†

“Creative education demands that schools should be brought into harmony with the community life, and should take part in the industrial and economic life.”‡

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*The Story of Great Schoolmaster—Wells—Macmillan—page	125.
†       “               “               “               “               “	128.
‡       “               “               “               “               “	119.

*To Do.*

List five simple construction projects which boys or girls of the Primary grades could carry out in the average class-room using materials locally available.

List five more difficult construction projects which Middle classes could do.

## CHAPTER VIII.

*To Think About.*

In the average class-room, who chooses the activities ?

In real life, should we expect others to make our choices for us ? Does a person of strong character do this ?

Should the teacher allow children to choose what they are to do in school ?

## DEVELOPING STRONG PURPOSES.

The following is an account of a teaching unit used in the Training School for Village Teachers, Moga, in the Third Primary Class during the year 1927-28 :—

## THE POST OFFICE.

The teacher of the Third Primary Class was new. He had just graduated from the Normal Class and was teaching for his first year. He had much to learn. But wisely he decided to put some trust in the children's choice. He spent his first ten days of school-work in getting acquainted with the pupils. He gave them plenty of interesting reading to do, and tested in various ways their skill in

arithmetic. Above all, he conversed with them a great deal, trying to build up the habit of talking freely about matters of interest to the class.

On the tenth day he told the class that they were to choose what they wanted to study and do this year. He said each pupil was to think over the things he was interested in and choose one enterprise which he would like the class to undertake. The following day as each pupil presented his choice, the teacher wrote it on the black-board. The twelve activities suggested covered a wide range of interests. A study of wheat ; making a garden and selling the produce ; playing Post Office ; learning about cotton ; building a railway ; and studying motor-cars, were all suggested. The teacher then asked each pupil to tell the class why he had chosen that special subject. This oral composition took all the time they could give to project work that day.

The next day began the debate on the choice for the year's work. Pupils warmly defended their own suggestions. After much discussion and much voting, one subject after another was struck off the list on the black

board. On the fifth day of discussion the Post Office was chosen. So strong had been the arguments of the advocates of this project that the final decision of the class to accept it was almost unanimous.

The teacher, remember, was new. This was his first experience. He was still afraid of children's choices, fearing that maybe they really could not choose wisely. So he said to me, "We have never had a Post Office project in the Third Year. What can we do? How shall we manage it"? I said to him, "Do not ask me. I am not a member of the class. What do your pupils want to do?" He said that they wanted to do a great many things. I suggested that they be allowed to try some of those activities in which they showed interest.

The next session he proposed to the class that they list some of the activities they had thought of in connection with playing post office. They were all eagerly ready with ideas. First of all, they wanted to have a real post office. They wished to build it large enough for them to enter and work inside of it. They wanted to sell real stamps and write real letters. They wanted to distribute mail. They wanted to send out real mail.

They wanted to learn how to make out money orders. Some were interested in postage stamps of other countries. Some suggested that one boy should be Postmaster, another Telegraph-master.

These ideas were all carefully written on the board. A discussion began which lasted for several days. Impractical suggestions that were made were very quickly ridiculed by more practical members of the class; and pupils with good suggestions were quickly recognised as leaders. Instinctively the pupils were organizing themselves in those days through their discussions and their lessons. When the postmaster and other officers were chosen, it was easy to see that the pupils themselves had been weighing opinions and forming their own judgments of their classmates.

The pupils finally laid out on the grounds near the class room a ground plan of a miniature post office, and they built the walls three feet high with rooms large enough for the various members of the post-office staff to do their work. They sold all the postage stamps and postal cards required by all the school. They distributed the school mail in the morning. They took the mail to the town post office



at night. They made a post-box in the class. They wrote letters for the servants. Their arithmetic was motivated through the preparation of money order forms, estimating cost of registered packages, etc. This activity provided a large amount of interesting practice in reading, geography, writing and arithmetic. It held the interest of this class till the end of the year.

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Successful happy living requires successful choosing and purposing; but unless the school in its class work gives practice in these abilities the pupils, and later, the men and women which they become, will not be able successfully to choose and follow purposes. The project method requires continual choosing by the pupils, selection from among many possibilities by the class and the carrying through of the purposes chosen. This project is typical of almost all project work in this respect.

The need of training in choice is surely not less among Indian children and youths than among those of other countries of the world. In these days of rapid changes in institutions and national life throughout the world those who can make right choices and who



can carry through to successful conclusion the purposes agreed upon by the group are going to make the largest contribution to their national life and have the most satisfaction in their own lives.

*To Do.*

Get together a group of children for games. Tell them you will teach them a new game if they will choose it. Explain that the choice will be made by voting, and the majority will decide. Demonstrate the method of voting. Then describe briefly three new games. Let each child tell which he chooses and why. After discussion, take the vote.

## CHAPTER IX.

*To Think About.*

Do you think that parents or teachers should decide all matters for the children under their charge ?

At what age should children begin to make their own decisions ?

## MAKING THEIR OWN DECISIONS.

The following is an account of an experience in one of the Middle classes of the Training School for Village Teachers, Moga, 1927:—

## SELLING POTATOES.

The Seventh Year Class had a garden project. Almost all the class had decided to plant potatoes and the potatoes were growing splendidly. Although it was early in the season, potatoes were being sold in the bazar. The boys asked the teacher if they should not dig up their potatoes and sell them. His reply was that they must decide for themselves. The class determined to take up the matter the next morning. In the first period they began to discuss the question of whether they should dig up and sell the potatoes now,

or allow them to grow larger before marketing them. The class decided to send a committee to the bazar to make inquiries from shop-keepers. The committee came back with the report that the shop-keepers said that potatoes from fields near Moga were now being sold. They advised that it would be a good time for the boys to sell their potatoes.

The class then decided to dig up the plots of two boys in different parts of the field and see what those plots would yield. All the class helped in digging and picking potatoes, and soon the yields of the two plots were gathered. These were weighed, and the class estimated the value of the potatoes from each of these plots. They used the information about grades of potatoes and their prices which the committee had reported.

It was then suggested by some of the class that the potatoes would be worth more if left in the ground one more month, as they would grow so much larger. But one pupil pointed out that the prices would also be lower, as potatoes would be more abundant. This was a difficult question, whether it would be more profitable to dig them out at once, when they were smaller but high-priced, or whether a month

later when they would be larger but lower-priced. They asked the agricultural master about how much more the potatoes might grow in another month. The whole class then went to the bazar and inquired of various shop-keepers how much the price of potatoes might be after another month.

The class then came to the Principal of the school. They reported the facts they had gathered and asked him to make the decision. The Principal replied, "Are these my potatoes? Have I paid for them?" The pupils said, "No, sir, we paid for the seeds. We paid for the water. We paid rent on the land. They are ours." Then said the Principal, "You will have to make your own decision. You will have to take the responsibility. I do not want to be blamed for offering my opinion which may be a wrong decision and which may cause you loss." The class went to the Headmaster and said, "Sir, what do you suggest?" He said, "I can look over all the information you have gathered and see if I can think of any additional fact for you to consider." After going carefully over all the considerations they had brought in and all the accounts they had prepared, he said, "You

have not considered the fact that by taking out the potatoes now you can get a start of one month on the new vegetables which you will put into your field later." The pupils went back to their class-room and estimated what this would be. Then after much debating the class unanimously decided to take out the potatoes and sell them, and plant their new crop at once.

Life constantly requires decisions. A man who has been very successful in life said, "Decisions must be made. We cannot expect to decide right every time, but we must learn to make decisions and make them as quickly as possible and hope that we shall decide wrongly as few times as possible." More people fail in life through inability to decide for themselves, or through deciding without taking into consideration all the facts that are involved, than probably for any other one reason.

Now we learn to make decisions quickly and with a fair amount of accuracy by having *practice in making decisions*. Reading books gives us information, but we learn to make decisions by making decisions, not by gathering information. The school must therefore afford opportunities for pupils to

make decisions. Problems must be proposed to the pupils as frequently as possible, if the school room is to be a place of life and prepare for the most successful life.

Project teaching involves constant decisions by the pupils. The skilful teacher will see that pupils face their problems squarely, discuss thoroughly all the facts involved, and make their own decisions. Such teaching builds strong character.

*To Do.*

Imagine a class of Primary pupils undertaking to make clothes for their dolls. Make a list of the difficulties they are likely to encounter and the problems they will probably have to solve, as they carry out this project. Mark with one X those problems which the children should solve without help from the teacher; mark with two XX those questions which they should answer with the teacher's help; and mark with three XXX those cases where the teacher should make the decision.

## CHAPTER X.

*To Think About.*

Why are pupils in most schools not allowed to help each other ?

What is the effect of giving individual pupils prizes for good work ?

Do you think that pupils might become as interested in working for the honour of their class as they are for their own honour ?

## WORKING TOGETHER.

The following is an account of class-work in the Udipiddi School of Home Arts, Jaffna, Ceylon, in 1924-25 :—

## FURNISHING THE HOME.\*

The Fifth Grade girls studied the furnishing of the home. First having in mind the plan of the house which the Fourth Grade were making, the children talked of the things which were necessary in the way of furniture. Plans of chairs and tables were

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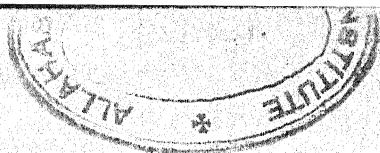
\* Reprinted from the Moga Journal for October 1930 with the following note 'Extract from a private report on the Udipiddi School of Home Arts, Jaffna, Ceylon.' For a further account of projects in this interesting school see 'Projects In Indian Education', pp. 138—150.



drawn, and samples of the kinds of wood which could be used were collected and the costs of material and labour discussed with the carpenter. Then a call from the seventh grade came for furnishing a small kitchen for experimental cooking. This they went at with a will, measuring and drawing model utensils such as the cocoanut scrapers and vegetable and fish knives, securing estimates from carpenter and blacksmith by actually calling them into the class, and selecting the best and cheapest woods for the stands of their tools.

The contrast between new and old never stood out more clearly than on the occasion of the visit of the carpenter to the class. What was going on had vital meaning in the experience of the whole class. There stood the carpenter, the target of a battery of rapid-fire-questions from members of the class, each question definitely tied to the work in hand. As the estimates and complete accounting was in the hands of the children, they questioned and reckoned so shrewdly that the carpenter complained to me, after the work was completed and paid for, that he had not received enough to pay for his work. I told him that was his look-out, as





he had agreed to the bargain estimate. But that if he felt that he had estimated under duress, he could console himself with the thought that this was not his first nor last job for the school.

To complete the kitchen furniture, many baskets, sieves, pot-holders, collanders, etc., were needed and the class went into the business of learning to make baskets. All kinds of baskets they made for the use of the kitchen. Then they went on further and also made baskets for their own use, such as pencil-cases and sewing-baskets. Many of the girls also learned to make the mats which they use in their houses for sleeping and other purposes. This business of basket-making kept them till the close of the year, and was the stimulus to the invention of an ola-leaf cutter, a labour-saving device made of old safety-razor blades. The old method was to cut each strip of leaf separately. The invented machine cuts a double ola section in 8 or 12 strips at one cutting and insures that these leaf-strips are all of exactly the same width, and with smooth edges.

The girls of this class made an excursion to the carpenter's house to collect different

kinds of wood, and to see what was going on in the carpenter's village. In hygiene, the care of furniture and utensils came up for discussion and was the cause of a searching inquiry into the methods used by the girls in washing the plates from which they eat their rice and curry.

Co-operation—the ability of people to work together—is essential in family, community, town or national life. But this is not fostered in the traditional school where the emphasis is placed on individual recitations of lessons to the teacher, examinations of individuals, and ranking the pupils of a class on a comparative basis. All these methods engender a spirit of rivalry and desire for supremacy, rather than co-operation and helpfulness. If the school is to be *life*, and the best kind of life, its pupils must learn co-operation by working together and carrying through common enterprises that are rich educationally.

The girls in this Fifth Grade *worked together* planning and furnishing the little house made by the Fourth Grade. Then they took as a *common task* the furnishing of a kitchen for the Seventh Grade. They were

working for the group ; the honour and praise for success was not for any individual but for the whole class. Each contributed her ideas and efforts to the common purpose of all. They were a small democracy at work, and they were learning the most valuable lessons of citizenship through daily practice of sharing common purposes and ideals and service.

*To Do.*

Find evidence in the projects described in Chapters VII, VIII and IX, that the pupils in those classes were learning co-operation.

Think out a plan for interesting a Middle class in working for the improvement of the *whole class* in arithmetic.

## CHAPTER XI.

*To Think About.*

Think of some society or group of which you are a member. Who are the most useful members of the society? How many individual members are dependable and responsible?

Do you think children should learn in school to take responsibility?

## INDIVIDUAL RESPONSIBILITY.

The following is an account of a class activity carried out at the Training School for Village Teachers, Moga, during about three months of the school year 1926-27 :—

## THE HISTORY OF OUR SCHOOL.

The boys of the Fifth Class (First Middle) undertook a study of their school from its beginning. They wanted to find out why and by whom the school was started, what the ideals of the founders were, and how these ideals had been developed. They gained a historical sense and a perspective of time which many pupils do not acquire until much later in life. Many former pupils were called in and interviewed, and their stories

compared, and an attempt was made by the class to write an authentic history of the school. The class also made models of the early and present buildings. They studied the values of property and buildings and the cost of maintaining the school. They made a comparative study of the hygienic conditions of the early days and the present, listing the diseases in the school, and, if possible, finding why certain diseases had been prevalent. They listed all the places in India from which pupils and visitors came to Moga School, studying the routes of travel, mileage, cost of journeys, rivers crossed, etc., etc. As the geography of Class V is India, this work secured interest and purpose for their required study of that subject.

A large amount of practice in penmanship was secured through writing letters for information and recording the facts in their note-books. Each pupil kept his own Project Book and had his own personal responsibility for parts of the investigation. The pupil, writing the best composition on the subject, had the honour of copying it into the permanent class book. A large amount of arithmetic and geography were used in

measuring land and buildings and making up costs for the records.

This class developed a loyalty to the school, and a realization of the ideals of the founders which they could get in no other way. Their study of the cost of their education gave them an appreciation of its value that we hope will lead to a deeper consecration of their lives to the service of God and their fellowmen.

The sudden death of the founder of the school occurred during the course of this project. The class then undertook to take charge of a Memorial Service. Each member had some assigned part in the programme, which had been planned by the class.

This project was very rich in the appreciations developed. It was a real study project or every member of the class. From this study they gained an understanding of the self-sacrifice and loyalty to an ideal which had characterised the founder. They expressed a desire to be trustworthy and responsible as he was.

Each pupil had a chance to practice trustworthiness. He had definite responsibilities. The class assigned these, and



expected individuals to perform their task. Each felt the importance of his share of the work.

If we want people to have a sense of responsibility we must teach it to them in their youth. According to the laws of learning this sense of responsibility must be taught to children by giving them opportunities to be responsible. Reading about responsibility or any other good habits or hearing a talk on the ideal of trustworthiness does not insure that the reader or hearer will fulfil the ideal. But getting pupils to practise the characteristic and seeing to it that the practice is attended with success and satisfaction, is the surest way to build that worthy characteristic into their lives.

*To Do.*

Plan a project of the "problem" type. Suppose that in conversation in the history class the following question should arise :—

Why has Asoka's reign become famous all over the world ?

How will you guide the class in planning the project, in assigning responsibilities to individuals and in securing the information they need ? Write a complete plan of this unit of learning.

## CHAPTER XII.

*To Think About.*

Recall some occasion when you have failed to discharge some responsibility which you had assumed ?

What reasons can you give for your failure ?

Are you in the habit of thinking ahead and imagining the probable consequences of your acts and decisions ?  
Should children in school learn to do this ?

## THINKING AHEAD.

The following is an account of a project carried out by the Second Primary Class of the Training School for Village Teachers, Moga, in June and July, 1930 :—

## MAKING BOOK-BAGS.

The Principal in looking through the pupils' accounts was distressed to find that one Second Year Primary pupil owed rather a large bill to the school stationery shop. He went to the class. "Moti," said he, "why is your bill for stationery so much bigger than your class mates ?" With shame Moti confessed, "I lose so many of my books."



The Principal then spoke to the class, "What is the trouble ? Why does Moti lose so many books ?"

Several pupils spoke up. "He is very careless. He does not look after his books at all. He leaves them on the road and he leaves them about the school compound."

The Principal looked grave, and spoke earnestly to the class and the teacher, "Could you not talk this problem over and see if something can be done to help Moti ? You know that he should not lose his books and have to spend so much money."

After the Principal left, the teacher immediately opened the discussion. The little boys were very serious as they talked over the shame to their class of having such a careless pupil as Moti. Finally one of the pupils said, "He would not lose his books so easily if he tied them together or if he had a bag for them."

Another pupil said, "That is a good idea. Can you get a bag, Moti ?"

Moti said, "I have no bag, and I do not know where I can get any ?"

The teacher asked whether Moti could not make a bag. The boys thought he could.

Another pupil said, "Could we not all make bags for our books ?"

Then followed a long discussion, after which the pupils decided that they should all have bags like those owned by a few of them. The class then discussed the cost of the cloth. A committee was selected to go to the bazar and bring samples of the cloth which they thought could be used for bags. The question of where the money would come from then arose, and the pupils decided that they would earn their own money. There were plenty of little jobs they could get and errands they could run and earn sufficient money, they thought. Measurements were made and calculations carried on until the class estimated how much cloth they would need.

The next day the committee reported that there was a good strong *khaddar* in the bazar at four annas a yard. After more figuring and measurement the class estimated that As. 3-6 would pay for the cloth for a bag. One boy pointed out that the white *khaddar* would get soiled very quickly. The class then discussed the question of colour and agreed that they would like to have their bags dyed blue. The class then appointed a committee to

consider the question of how much colouring would be needed and how much thread, etc. It was found that for two pice more from each pupil, thread, needles and colouring could be secured.

A letter was written to the Headmaster and his approval secured for borrowing money from the school for the cloth and supplies, with the understanding that the money be repaid from the boys' earnings within six months. A committee was selected by the class. They went with the teacher to the bazaar and bought *khaddar*, needles, thread, and colouring. The committee found that there were some fast colours and some colours that faded in the first washing. They decided that they must have the fast colours even though it cost a little more.

Then various patterns were made by the pupils until one was voted on by the class as the best of all. The cloth was carefully cut out by each pupil. They decided to practise *sewing* until they were satisfied that they could sew their bags nicely. After a few days they were ready to begin the sewing of their bags.

When they were completed the question arose as to how they could keep their bags

from getting mixed up. One pupil reported that he had seen names on book-bags. The class agreed that this was wanted by all. So each pupil wrote his name the way he wanted it on his bag and then outlined it in various stitches.

The bags were now ready and the class were very proud of their accomplishment. Moti felt that he had been restored to the confidence of his class. He resolved that he would prove that he could keep as good care of his bag as any boy in the class. They planned the work that they would do to earn the money they had borrowed, as going to the post office for the school, carrying water for some of the teachers and selling produce from their school gardens. These plans they carried out in due time.

Life requires us to plan ahead to meet situations as they arise. Yet many schools fail to foster this important ability. In most classes, the teacher is the only one who thinks ahead and plans. Should not the pupils also have some practice in this ?

The pupils in this Primary class were small boys, but they had to face the necessity of forethought. In order to help Moti they

had to think ahead what kind of cloth was needed, how to arrange for the colouring, how to plan the cutting and making of each bag, how to mark each bag so that it could be easily recognized, and how they would earn their money to pay for the bags.

A large amount of real practical arithmetic was carried on through all these days in connection with the project. Writing letters asking for permission for their trips to the bazaar, motivated the writing work. Drawing plans for their bags was a most practical lesson. Discussions on cleanliness, on the care of one's possessions, etc., related much of the required work of the course of study to the project in hand and the class-room work was related to real life. Forethought was being practised in this class-room.

### *To Do.*

Gather a group of children after school. With the teacher's permission try to interest them in making some simple things (*i.e.*, easy to make) needed in their class-room; *e. g.*, a new picture mounted on cardboard, curtains for the cupboard, or windows, a pencil-box for the teacher,

book-marks for the books used by the class, a growing plant for the room, etc.

Help the children to plan this project. See that they think out the problems and difficulties they will probably meet.

## CHAPTER XIII.

*To Think About.*

Revise Chapters VII to XII. Which of the activities described seem to you most valuable educationally, and why?

## SOME REASONS FOR TEACHING BY PROJECTS.

You have now seen from several examples of projects or units of experience, how valuable are some of the results of these ways of learning. Study is made real and closely connected with life. Pupils are given opportunity to make choices and form strong purposes. They are trained in independence, and are taught to make their own decisions. They learn to work together effectively. They grow in self-reliance and dependability. They develop the power of forethought.

One of the most important duties of the schools should be to train pupils to be good citizens. Patriotic service of one's country should be the goal of every educated person. Yet schools in India have too seldom produced citizens who can think for themselves.



Men and women who have merely learned text-books parrot-fashion are not likely to have the qualities most valuable for good citizenship. They have not learned to make intelligent choices and decisions, nor to co-operate in carrying through common purposes.

India needs, as does every modern nation, thinkers, men and women, who can reason out their conduct, make plans and think through problems. Yet most teachers permit their pupils to spend too much time memorizing and cramming for examination. They are not practising thinking, and thinking power will not result. Many of our schools give an education absolutely divorced from any constructive activity, any manual labour. We cannot expect those boys to be interested in any manufacturing process or to have real respect for the workers of the world, nor to have the right spirit as capitalists in a world of business, nor to be willing to help with their own hands in the cleaning up of the rubbish that is causing the spread of an epidemic in a disease-infested city. The kind of education we give is not likely to produce a Burbank to discover new varieties of fruits or flowers, or an Edison to invent the incandescent



electric lamp, the phonograph, etc. It will not stimulate a Scott to reach the South Pole. It will not prepare for a life of adventure, the laying out of new paths of human achievement, and the conquest of the forces of nature.

The project method will make a great contribution to the development of Indian childhood and youth. It is sad to see so many young people who lack purpose in going to school. Lack of vital interest makes most of the learning in school very dull. It is possible for children to be too docile. Lack of independence and initiative in school is followed by lack of purpose and initiative in the work of life. A project method school will develop in its pupils initiative, purposing and sense of responsibility. These are essential characteristics of good citizens.

So important are these results of teaching by means of the project method, that it seems that every patriotic teacher should be guided by the principles which have been explained in the previous chapters. These principles and their practical application will be made clearer by the full description of a project which follows in the next chapter.

*To Do.*

Choose one of the projects described in Chapters VII to XI.

List the probable results of the project. Make your list in three columns ; first, *information* acquired by the pupils ; second, *habits* practised by the pupils ; third, *attitudes* acquired by the pupils.

## CHAPTER XIV.

*To Think About.*

Revise Chapters I to V. Write down brief statements of the principles explained. Consider whether the teachers whose work has been described in Chapters VII to XII have been guided by these fundamental principles of teaching.

## A UNIT OF PURPOSEFUL ACTIVITY.

The following is a full and detailed account of a project carried out in an older class and occupying a considerable amount of school-time for a year :—

## SERVICE TO THE SICK.\*

(A Unit of Work in Class VI of the Training School for Village Teachers, Moga).

Class VI which undertook this project was made up of about twenty Christian boys from as many different villages. Most of them have been several years in the Moga School. Their teacher has several qualities which are essential for success in this type of teaching. First, he is a friendly leader. The pupils

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\* Taken by permission from "Projects in Indian Education" Van Doren, Association Press, Calcutta.

trust him and ask his guidance in making their plans. Second, he knows how to listen. The pupils talk freely in his presence. Third, he is resourceful. He is ready with suggestions which help to stimulate interest and keep the work going. Fourth, he expects his pupils to work hard, and tries not to do for them what they can do themselves. Fifth, he is himself industrious, and uses every possible means to supplement his own knowledge, so that he may keep the project moving out into richer fields of interest. As he had himself once studied compounding, he had a little technical knowledge useful in the project which the class chose. This unit was chosen in two consecutive years by Class VI. The description which follows combines the experiences of both classes :—

#### HOW THE UNIT WAS SELECTED.

The teacher had in mind the needs of these boys about which he had been thinking. It seemed to him the village boys of this age should know more about the prevention and cure of common sicknesses. He thought of his own knowledge and experience in these matters, and was prepared to help the boys in case they wished to learn what he knew.

he did not plan out a set project, but he did plan rather carefully the class discussion for the first day, and had in mind some suggestions for work. He was prepared for several possible *leads* which might come out of the conversation.

The teacher describes the first session as follows :—

“When our school opened after the vacation, and the pupils entered my class (VI Year) I enquired as usual after their welfare. I asked especially which of them had been ill during the vacation. Several pupils told us that they had had fever; some reported that they had received small hurts while working; one said that he had cut his foot with a digging-tool, and one said that his eyes had given him much trouble. Then I asked what remedies they had used. In this way they learned that proper medicines are not used in the villages, and there is reason to fear that most of the remedies aggravate the diseases. I enquired about various common methods of treating sickness, as magic, sacrifice, the use of charms, etc. Then I explained, giving many examples, the harm of such methods. There was at hand, right on our compound, a striking

example. The two little daughters of the *bhisti*, who brings water for the compound, had lost their sight because they had not used proper medicines. The pupils made a personal investigation in this matter. After that we read about the dangers from carelessness in different diseases.

“Then we discussed magic, etc., and the boys looked up a number of Bible references, from the study of which they saw clearly that there is no use in magic and charms, and that God is displeased with those who use them.\*

“Then the boys began to feel a desire to know the proper way of treating diseases. They said that they wanted to learn about the right remedies in order that when there was no hospital near, they might help themselves and other village people. Then I asked them how we could obtain correct information. They suggested hospitals and various doctors' books. Then a full discussion followed, in which it was brought out that all the pupils could not enter hospitals for training in medicine ;

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\* This project was carried out in a Christian school, and naturally the teacher included religious teaching and the Bible in the reference material. These references are included in the account, as it is a true statement of what actually occurred in the class. Other schools carrying out a similar project may omit or adopt the religious teaching.

yet all desired some practical knowledge for everyday use. For that reason they requested me to teach them about these things in the class.

"I then brought out by an illustration that in order to begin this work we must see and study a hospital. When any one wants to learn carpenter's work, he must take tools and wood and learn from using them. If he is only *told* that the wood is shaped with the chisel, is smoothed off with the plane, and is cut with the saw, then he will never master the trade of carpentry. The whole class decided that they would construct, in class, a hospital on the plan of the Moga Hospital."

#### THE GENERAL DEVELOPMENT OF THE UNIT.

The boys arranged for their visit to the hospital and dispensary. They found so much of interest that they made other visits. Discussion, study and investigation of the questions, which were constantly arising, occupied about a period of the class-time for six weeks. At the same time much, writing was found necessary, a good deal of calculating, much reading, some study of geography and history, some drawing, and some Bible study. The



various activities connected with the project came gradually to occupy a large part of the class-time which would ordinarily be given to formal study of the required subjects. The teacher, of course, kept in mind the Government Syllabus in arithmetic, geography, history and reading and succeeded in supplying a motive for much of the required work through the boys' interest in their investigations.

The result of the study was that the class decided it was not practicable to build a model of the hospital inside their class-room. They, therefore, abandoned their first purpose and decided to set aside at the rear of their class-room space for a dispensary and a dressing-room for "First Aid." This second purpose then became their Major Project, and so rich in interest did it become that it occupied the class for the remainder of the year. This is a good instance of right technique in using the Project Method. The teacher helped the class to go forward, with effort, in the direction of their purpose. They overcame many difficulties, but when the difficulties became of such a character that solving them might waste time and not attain the fullest





possible educational value, the teacher helped them to discuss the matter fully, and adopt a more practicable and more useful purpose. The adoption of a Project of Service to others was a more valuable religious lesson than any formal study of the duty of social service. The next year, when Class VI again chose this Dispensary Project, the study of the Moga Hospital became the preliminary stage of their work.

This Major Project led, as all good projects do, into related or sub-projects. Some of these are described in the following extracts from the teacher's report :—

“ Since the furnishings and supplies were borrowed in various ways and from different persons, it was necessary to keep a record of them. For this reason the pupils chose a secretary from among themselves, and he was given a note-book to keep the list of all supplies, the account of the income of the collection box and expenditure. When everything was assembled we turned our class-room into a dispensary and dressing-room. The school medicines which were usually kept in the hospital for pupils were secured by request and were placed in our dispensary. When the

work began, it was found necessary to make a register and forms like a real hospital. The pupils then appointed two boys to go to the Moga Hospital to see the register and forms used there. The pupils brought back several forms in English. They then made a register of patients and other papers according to the model of the Moga Hospital.

“Next came a discussion about the time of opening and closing the dispensary. It was decided that the first school-period should be set aside for this work, and in the evening, too, a little time would be given. Then they had to write to announce the news of the dispensary to sick folks. They wrote a proclamation to the effect that, for the sake of the comfort of the people of the Mission Compound, a dispensary had been opened in the room of the Sixth Class where, at certain times, medicines could be obtained. We stated that we would ourselves give medicines for slight ailments, and if other sick people would go once to the hospital in the city for medicine and then give us their prescription slips we would get the medicine from the hospital for them, and dispense it from our own dispensary. In this way sick people would

have the trouble of going only once to the city hospital. This proclamation was written co-operatively by the class and affixed to various places in the compound.

“When the room was ready we had a conversation about carrying on the work. The pupils divided themselves into four parties. One party saw the patients, entered their names in the register and gave them slips. One pupil of this party went to the hostel to give medicines to the boarding pupils who were sick. A second party did the work of giving out medicine and applying it. The third and fourth parties filled out the forms, did bandages and were responsible for making up medicines. Every day the work of these parties was changed. When the patients came, prayer was offered with them for God’s help before the work was begun.

“When the dispensary had been going on for some time the pupils realized that certain important medicines were being very quickly used up. Because they could not be obtained in quantity from the city hospital, the class thought that some money should be collected and necessary medicines bought from the bazaar. After sufficient discussion, it was decided that as this necessity would be a

permanent one, a collection-box ought to be made and hung up in our room, in order that not only we but others also who came to get medicines or to see the work could drop in something if they wished. This plan pleased all and was carried out. The hope of the pupils was fulfilled, and the work went on without hindrance.

“Our dispensary became famous in the school. Then I had a chance to give a magic lantern lecture to the whole school on physiology. On the material of this lecture my class took an examination and also did some reading.”

The class met some of their problems in a way that should give encouragement to those who believe in the character-building values of these freer methods of teaching. For instance, a table was needed for dressings. They inquired the price of tables in the bazaar (Rs. 3-8-0), then calculated the cost of the wood (Re. 1-8-0). They decided they could save money by making the table. They made a written request to the Principal for Re. 1-8-0 from school funds to buy the wood. This was the only instance when the class asked for school funds for their enterprise. The class-room for a few days became a busy shop.

No time was wasted. In order to save time for the work, the boys studied extra hard. At any time of the school day, three boys would be seen sawing, planing or hammering in one section of the room, while other groups would be seated on the floor, making calculations, drawings, writing accounts of the work or studying formal lessons.

Another of the sub-projects is thus described by the teacher:—

“In the beginning of December there was conversation in the class about preparations for Christmas. After some discussion the class decided to make some toys and clothing for babies in the Ferozepore Hospital. And they wanted also to make paper chains for the decoration of the school hall. After this they decided that they would buy with their own money the material for making the gifts for the Ferozepore babies. They took up a collection and bought several small pieces of cloth from which they made six tiny *kurtas*, and they also made some rattles and scrap-books. They got from the school the coloured paper from which they made chains. As the Christmas holidays drew near, I noticed that almost all the pupils in my class were making various things to take home as gifts. Some of

them had prepared, or had had made in the bazaar, for their little brothers and sisters, clothing, toys, caps, etc., and almost all had made coloured paper decorations and chains for the decorations of their own homes. Four pupils who were going to the same village prepared to tell stories to the village people. Almost every boy took some medicine home with him, for instance, quinine, zinc lotion, cough mixture, spleen mixture, tincture of iodine. The spirit of love, service and giving was working in the pupils. Then I read with them the following references from the Bible, from which they received joy and strength : Acts 20-35, I Cor. 16-2 ; II Cor. 8-7- ; Mal. 3 : 10, 11."

During the second year's experience with the dispensary the missionary's wife discovered mosquito larvæ developing in an unused house on her compound. She sent an ' S. O. S. call ' to Class VI, who instantly (in the middle of a class session) mobilised to investigate and fight the danger. This produced a new access of interest in the prevention of malaria, especially by mosquito extermination. This phase had not been thoroughly studied before and the master was quick to seize the opportunity. The class studied, observed and experimented, made some charts



on the life history of the mosquito, cleaned up the Memsahiba's compound, and prepared a careful report for her with advice as to regular inspection and other means for conquering the mosquitoes.

The Dispensary Project, as it finally developed, is thus described by a visitor:— \*

“ The day I spent in this class I found the schoolboys requiring treatment waiting in a queue, and one boy acting as clerk and filling in the forms, which had been prepared by the class, with the name of the patient, his disease and the prescription given in consultation with the teacher. Another boy did the dispensing, and a third boy dealt with sores. Some of the boys were preparing patients' forms, one boy was preparing a form to record the height and weight of the class, and another was attending to the register of patients. The remainder of the class was engaged in a weekly stock-taking and preparing a list of drugs to be ordered. The actual quantities required, with their cost, were written on the blackboard. The cost of the drugs amounted to 12 annas and 6 pies. The teacher, thereupon, got the boys to work out by the unitary, proportion and multiplication

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\* Rev. O. Thomas of Assam.

methods, the cost for a year at 12 as. 6 p. per week.

It was a great pleasure being in the class and seeing the keenness of the boys and evident interest and pride they took in their work. The class-room, too, reflected the interest of the boys, for the walls were covered with diagrams, charts, maps and pictures prepared or collected by the boys."

The following summary is given to show as many as possible of the details of this project, as they actually developed, and to give an appraisal of their educational values so far as the teacher and supervisor are able to judge them. More accurate measures than such opinions are not at present available in India. If 'standardised achievement tests' in Urdu were in use, we should undoubtedly be able to pass more accurate judgments on the success of the method.

*Problems which arose* (listed approximately in the order of their occurrence):—

Why did the deep cut on Prem's ankle not heal more quickly?

What methods do our relatives and neighbours in the villages use to treat sores?

How many persons in our village communities (Christian sections of the villages) had fever during the weeks we were at home?



How many of them received medical aid ?

How many of them consulted a *hakim* ?

What values are there in the *Yunani* system of medicine ?

Why do the people of our village resort to charms and magic to heal disease ?

What sacrifices do the people perform in times of sickness ?

What caused the blindness of Barkati and Phulmani ?

What does the Bible teach about magic ?

How can we help our people to overcome these superstitions ?

Can we do anything to help the sick ?

How can we learn the best methods of treating sores, fevers, diseased eyes, etc. ?

What Government publications can we secure for our study ?

How can we become doctors ?

If we do not go up for training in medicine, can we still gain enough practical knowledge of hygiene and medicine for every-day life ?

How shall we reconcile the differing measurements of different pupils ? How shall we find an average ?

How shall we learn the cost of the buildings ?

Are the buildings well adapted to their use ?

Where have all these sick folk come from ?

What different kinds of homes do they live in ?

How far have they travelled ?

By what methods of travel have they come ?

What diseases have they ?

What are the most common diseases and what proportion of all the patients are suffering from each ?

What drugs are most used in this dispensary ? What are the amounts of each, and what are the prices ?

How are drugs weighed ?

From what countries are the various drugs secured ? From what are they produced ?

What medicinal herbs are grown in India ?

When was Western medicine introduced into India ?

What was the attitude of various rulers of Indian history towards medicine and physicians ?

What different kinds of healing miracles did Jesus perform ?

What can we learn from Jesus' healing miracle that may help us in the treatment of the sick ?

How can we record the facts we have learned about the Moga Hospital ?

How can we best thank the doctors and staff of the hospital for kindly explaining everything to us ?

How much space will be needed to build a model of R. B. Dr. Mathra Das' Hospital in our class-room ?

Of what use will such a play-hospital be ?

What was our first reason for studying the Moga Hospital ?

Will building a model of the hospital help us in our purpose ?

How can we get practice in improving the health of ourselves and others ?

Can we help the house-father in taking care of the pupils sick in the hospitals ?

Can we spare room enough for a dispensary in the class-room ?

How can we start a dispensary ?

How shall we provide furniture and equipment ?

What furniture and equipment do we need ?  
What is in the Government dispensary ?

What is the proper way to request our masters, Principal, etc., to lend us articles ?

How can we keep from forgetting to return borrowed articles ?

How can we meet the need for a table for dressings ?

What records shall we keep ?

What kind of a register and forms are used in Moga Hospital ?

What time shall we hold our dispensary ?

How shall we announce the opening of our dispensary ?

What will be our daily duties ?

How shall we divide the responsibilities ?

Shall we begin each morning with prayer ?

How will prayer help us ? What parts of the Bible will help us to answer this question ?

What system shall we use for checking up our supplies, expenditures, orders for the coming week, etc. ?

What shall be done when patients have some trouble which we cannot treat ?

How can we help the women who have to walk two miles to get medicine for their babies from the Government dispensary ?

What shall we name our dispensary ?

How shall we thank R. B. Dr. Mathra Das for giving us his picture ?

How shall we hang the picture of R. B. Dr. Mathra Das ?

How should drugs be weighed and measured ?

How should bottles be labelled ?

What will be the probable cost of running our dispensary ?

How shall we meet this cost ?

What are the commonest diseases in Punjab villages ?

Which disease will be most useful for us to study ?

What books will help us to learn about the cause and cure of malaria ?

How shall we secure books not now in our school library ?

How shall we find the information in these books ?

What is the Junior Red Cross ?

Will it be worth while for us to join the Junior Red Cross ?

Will the Boy Scouts teach us anything ?

Should we be interested in how to care for young children ?

What is the cause of malaria ?

How can malaria be prevented ?

What is the cost of quinine ?

How can we show on charts and posters the facts we have learned about malaria ?

How shall we prepare a talk to the school on malaria ?

Why is quinine mixture given to all the pupils of our school ?

What is the cost of this method of malaria prevention ?

Why are not quinine pills (*golian*) given ?

Should school boys be compelled to take bitter medicine ?

How can we arrange to administer the quinine ?

Can we make the quinine mixture ourselves ?

What is the condition of health in our own class ?

What is our average weight ? Is it up to standard ?

How can we improve our weight ?

How shall we keep a weight record ?

Are cigarettes injurious ?

How many patients have we treated so far ?

What is the average per day ?

Why have we made so many errors in our register ?

Do we need more practice in adding long columns ?

How can we improve our writing ?

How can mosquito larvæ be recognized ?

How can mosquito larvæ be destroyed ?

What would be the cost of treating all standing water in the compound with kerosene oil ?

What report shall we make in regard to the Principal's compound ?

How much does our drug supply cost, on the average, per week ?

Can we save by buying some drugs in quantity ?

How can we make our "Project Book" more attractive?

What can we send to the class in America who sent us their illustrated booklet on a Cotton Project ?

How shall we make a booklet on malaria interesting to children in America ? (They finally designed for their cover a huge bottle labelled Quinine and cut the whole booklet the same shape.)

*Sources of information used by the class in solving their problems :—*

The teacher's knowledge.



Dr. Mathra Das and the staff who kindly helped in many ways.

The Government Dispensary registers, accounts, records, etc.

Hospital building observed.

Missionaries' homes on the compound.

Experiences of fellow-pupils in the villages.

History of India.

Geography of India.

*National Geographic Magazine.*

Publications (posters, etc.) of Junior Red Cross, Lady Chelmsford League, etc.

Boy Scout Manual.

Government pamphlets on village sanitation and prevention of epidemic diseases.

*Guide to Moga* (local publication).

*Life, Light and Cleanliness* (a Hygiene Reader).

*The Treasure Chest* (Urdu magazine).

*The Teacher's Guide* (Urdu Manual).

The Bible.

*Analysis of subject-matter covered :—*

*Oral composition.*—Daily practice in discussion.

*Reading.*—The Government requirement, and much in addition. Emphasis on silent reading.



*Writing.*—Letters, labels, orders, forms, registers, charts.

*Written composition.*—Daily records in Project Books.

*Arithmetic.*—Rule of averages, from measurement of the hospital, also from taking the weekly and monthly count of patients—percentage, from finding out how many patients were suffering from various diseases, and what places and provinces they came from—practical problems from making various things—the Unitary method and practice in problems of price, money, etc., from the prices of medicines and cloth for bandages, cleaning cloths, etc., problems in measurement.

*Geography.*—Where the people in Moga Hospital come from and how they come—trade with the different provinces of India, Afghanistan, Baluchistan and various countries—the situation of Moga—a map of the continent of Asia with Moga on it—the relations of various provinces and countries where different medicines come from—a little knowledge of Europe and America—main parts of India and their location on the map—trade routes—climate and products of various parts of India.

*Geometry.*—Measuring the hospital and making a plan of it—measuring letters—measurement of angles—square measure—knowledge of various forms, triangles, squares, etc.,—parallels, from making the table, and from cutting the paper for letters.

*History.*—The history of Moga Hospital. By finding out the religions and stations of different patients they learned something of the origins of different religions and who their founders were. What was the method of curing disease in our country in olden times and when did this method begin? What king first favoured English medicine?

*Chemistry.*—How different medicines are made—solutions of various strengths, etc.

*Physics.*—Weighing and measuring—reading temperatures.

*Botany.*—Trees, shrubs, roots, etc., which yield drugs.

*Drawing.*—Maps, plans, objects used in hospitals.

*Handwork.*—Carpentry, iron-work, dyeing.

*Play.*—Methods of lifting a patient, drill, dramas.

*Bible-Texts.*—On the wrong of belief in magic—on giving service, sacrifice, etc.

*Outcome in terms of Attitudes and Habits :—*

Growth in skill in silent reading.

Habit of reading to secure information.

Attitude towards reading (as an activity of real life) greatly improved in the majority of the class.

Habit of approaching school work with alertness and interest.

Habit of seeking information from all available sources.

Habit of planning before executing.

Habit of expressing in speech reasons for action.

Habit of making lists and classifications.

Habit of courteous discussion.

Ability in reporting findings to the class.

Habit of sharing responsibilities and dividing duties.

Attitude of critical judgment of their own work.

Willingness to work hard to improve standards.

Appreciation of importance of arithmetic as a tool in practical work.

Understanding of the importance of accuracy.

Class pride and loyalty.

Independence and self-respect.

Resourcefulness.

Taking pains to be courteous.

Carefulness in borrowing.

Willingness to sacrifice individual wishes to the class purposes.

Appreciation of the necessity for perseverance.

Appreciation of the reasons for suffering in the villages.

Appreciation of the difference between superstition and the Christian attitude.

Appreciation of the duty of Christian leaders in regard to health in village communities.

Desire to help others.

Appreciation of the needs of women and children.

Habit of giving their own money for a worthy cause.

Understanding of the principles of Stewardship.

Willingness to serve others.

Understanding of the place of prayer in the Christian life.

Growing interest in health.

*To Do.*

Make a list of the fundamental principles of teaching explained in Chapters I to V. Write opposite each principle an illustration from the above project which shows the application of the principle.

## CHAPTER XV.

*To Think About.*

State some of the character-building values of the project method.

## OTHER UNITS OF EXPERIENCE.

The following are briefer accounts of several projects which have been successfully carried out in Indian schools. They illustrate different types of projects :—

(1) The first project which I shall select to describe briefly is one which, to an unusual degree, stimulated originality in the pupils. In a girls' school, the United Missionary High School, Calcutta, Standard VI became interested in decorating the clay pots and other objects which they had modelled in clay. At first they just daubed colours on without regard for beautiful design. But soon they became interested in studying design. They began to observe the beautiful world about them and to find designs and patterns in the straight and curved lines they saw in natural objects. They devised some most original and beautiful decorations from the forms of Bengali letters. The account of this artistic

project was written by the girls themselves and may be read in *Projects in Indian Education*.\*

(2) Many good projects are described fully in the above book. One of them which would be useful in any Indian school was called an Indian Community Life Exhibit.† This was an enterprise of the whole school, which supplied the motive for many classes and individual projects. The purpose was to give an exhibit of the work of the school of friends and parents. Only Indian things were exhibited. Indian foods were prepared and judged on taste and nutriment value. Health records and Hygiene charts were made. Model gardens were exhibited. Hand-sewn garments, Indian needle work, Indian hand-crafts of many sorts, and Indian decorative designs were shown. The account of this project, if read in full, will be found very suggestive.

(3) The following descriptions are taken from the written report of a visitor‡ to the Moga Training School in 1926 :—

*Class I.* The children plan to build an actual house of the same materials as are used in

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\* The Association Press, Calcutta. Paper Re. 1—8. Cloth Rs. 2.

† Projects in Indian Education, pp. 72—76.

‡ Rev. O. Thomas, Assam.



houses in the Panjab and big enough to be played in *i.e.*, about  $5' \times 4' \times 3'$ . The construction of the house soon confronts the pupil with the need of certain skills. The length, breadth, thickness and height of the house have to be determined. This involves understanding and using certain units of measurements, *e.g.*, 1 foot, 1 yard, etc. As the house is made of sun-dried bricks which are made by the boys themselves, the need of counting and estimating the number of bricks required arises, and thus arithmetic begins.

From the beginning the children hear stories about the Home and the desire to read these and similar stories, as well as to read, on the blackboard and elsewhere, the information necessary in carrying on their activity, leads on naturally to Reading. The need of writing the various facts and figures and labelling the various prices of furniture which will be made later, leads on to the need for acquiring this skill. The plan of the house and the utensils used involve drawing, and the provision of doors and windows gives the teacher his opportunity to teach simple hygiene, ventilation, lighting, etc. The preparation of models of the various pieces of furniture and utensils



required in a house motivates the handwork and provides ample opportunities for discussion on the food we eat, its value and quality, the materials used in the house, what it is that makes a home attractive and comfortable, etc., etc. When I visited the school in January the school session was in the eighth month, and I discovered that even then the curriculum requirements for the year had been covered and arithmetic, writing, reading, composition had been surpassed, while a number of very valuable activities had been engaged in and information obtained which the ordinary curriculum does not expect."

(4) *Class IV*.—"The main project of Class IV is the village shop. In Moga this is not a play project, though even as a play project, a project of this sort can be made most valuable. In Moga, however, the village shop is a reality, for the boys are in charge of the shop which sells the vegetables obtained from the garden plots. In order to run the shop well the boys have had to do a great deal of investigation as to the way shops are run in the bazaar, how the goods are cared for, how bazaar accounts are kept, how profits are computed, what articles are

required in a shop, how goods are ordered and conveyed and how paid for when ordered from a distance, etc., etc.

The demands of the shop have led the boys to build a mud brick house about  $6' \times 6' \times 6'$ , complete with a door, to serve as a place to store their goods, and business is carried on just in front of the building. The shop is opened about half-an-hour before school opens and continues open for an hour, and then is re-opened after school closes. Two boys in turn look after the shop each day.

Every evening boys who have vegetables to sell bring their vegetables to the shop where they are weighed and priced according to the bazaar rate which the boys find out once a week. A careful account is kept of every transaction. In one book the name of the sellers, the goods sold, the quantities and value of the vegetables are entered. In another a similar account of the vegetables disposed of is kept. These accounts are made up at the end of the month and a statement made to the Headmaster who hands over to each boy the amount due to him. The various vegetables are sold to the school mess, the families of the teachers, married pupils and the missionaries and, if any



are left unsold they are taken to the bazaar and sold there. All the sales are carried on in actual cash.

These boys get a very practical knowledge of money, of weights and measures. They are provided with ample material for most interesting arithmetical calculations which fully cover the prescribed course. The business of shop-keeping suggests innumerable topics for composition of different kinds from business letters to advertisement of wares, descriptive accounts of business life, essays on vegetables, their utility, food value, diseases, etc.

As shop-keepers, the pupils are interested in a wider world than that of the village, geography of the outside world becomes a subject of considerable interest. Methods of transport, trade between different parts of the province and between one province and another, the varying products of different parts of the country and the reasons for the difference, are all matters of real interest.

I also noticed that these boys were keen readers. In addition to the prescribed Reader, the boys made ample use of the literature published in the vernacular, with which the Punjab seems to be well supplied. (Lahore alone publishes four Children's magazines !)

(5) This year (1930-31) the Third (Primary) Class of the Moga School decided to take up the problem "How leather is produced." They were interested in this for the following reason. In the Village Crafts course of the school the Fourth Primary Class is usually taught shoe-making. This industry is very popular and the Primary boys rather look forward to the time when they will make Indian shoes. Therefore, the Third Class wanted to study leather, in preparation for their industrial work next year. They went into the problem very thoroughly, collecting many samples of leather, pictures of leather products, and methods of leather manufacture. They studied the different animals from whose skins leather is obtained. They investigated the dyeing of leather and tried to do it themselves. From an old piece of fine leather given to them they devised and made a beautiful book, of which they are very proud. In this Project Book they are recording all the information they have learned in answer to their problem "How is leather produced?"

(6) The children of the Third and Fourth Classes of a Government Village School,\* tried

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\* Ghal Kalan, District Ferozepur.

to start a school garden. The result was very discouraging. Even after two trials, not a single plant came up! The children faced the problem, "Why has our garden failed?" They were stimulated by their failure to investigate the causes. The story of their investigations and their results is told, in an interesting manner by Sardar Inder Singh, B. A., B. T., Assistant District Inspector, in *Projects in Indian Education*.\*

(7) The last project selected is a general school project which has stimulated hundreds of individual projects. This project is carried on in the out-of-school hours of a dayschool, that is, it is a project not for the limited life within the school walls, but for the *greater* life of the school.

In the justly famous schools in Srinagar, Kashmir, founded by the Rev. C. E. Tyndale-Biscoe, M. A., a project of social service is continually going on. The purpose to serve others, which has become the tradition of the schools, is adopted by many individual pupils as their own purpose. These keep their eyes open to see opportunities to help the weak

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\* Pages 151—158.

and oppressed. They encounter often enormous difficulties, and have to think quickly and effectively to overcome them. The following account is given in the Principal's words from the School Log Book for the year 1928. A point worth noting is that the boys never report their good deeds. The sense of success and satisfaction which a boy gains from upholding the honour of the school is his sufficient reward —

“A school can be a great force for good or evil in a city, and, God helping us through good report or evil report, it shall be a power for the uplift of this city. Here follows some of the work attempted and some done in the year that now lies behind us. We have seven schools in Srinagar, one of which is a High and Middle school, one a Middle school and the rest Primary schools ; with also a High, Middle and Primary school in one at Islamabad, a town of 40,000 inhabitants, thirty-three miles distant. There are in all the schools between 1,400 and 1,500 boys, staffed by ninety teachers. Each school possesses a Citizenship Book, in which the headmaster writes down the cases of kind and brave deeds done by the boys which he sees or hears of from the staff or citizens.

If a boy reports his kind deed it naturally is a bad mark for him, and hence scores of deeds worthy to be noted are never known. The following is the summarised deeds that have been brought to me to countersign, and to investigate if I think necessary. When you think of this great number of boys who are daily being reminded that God has given them their strength for service, and continually hearing of and seeing their teachers and class-fellows rendering service, you can understand that we have got a move on in this land, and that the Srinagar of to-day is not the Srinagar of 1890.—

“The following table shows the results of getting a move on :—

Help to women	..	..	..	170
„ children	..	..	..	155
„ old men	..	..	..	64
„ blind men and women	..	..	..	34
„ citizens generally	..	..	..	115
„ animals and birds	..	..	..	57
Coolie jobs, parties of boys	..	..	..	32
Sanitation	..	..	..	17
Lost property returned to owners	..	..	..	34
Number of fires helped at	..	..	..	27
Money collected and given to the poor	Rs.	300		
Sick folk taken out in boats	..	..	..	719
Lives saved from drowning	..	..	..	21
Work done in the great flood	..	Legion.		



“Work done on behalf of women is mostly that of carrying their loads of rice, or fuel in the shape of wood and cow-dung, but also sick women receive attention. For example, four boys, finding a village woman who has come to the city and fallen ill on the road, get a bedstead and carry her to hospital. A weak woman coming out of hospital tries to hire a tonga, but she is unable to pay what the man demands, so a boy pays for her ; on a similar occasion, the boys being unable to pay, they carry the woman to her home. Again finding a patient from hospital unable to get home by boat, not having any money, the boys get a boat and take her themselves. And when they come upon a woman being bullied by ruffians they step in and settle the matter.

“In the case of children, it is often finding lost children and returning them to their parents, sometimes involving a long search, as the children often cannot explain to their well-wisher the necessary information. To show the diversity of action, one boy finds a girl molested by hooligans, he puts them to flight; whilst another, seeing a child crying because his rubber ball has taken to the water, takes off his clothes and swims after it, although it is the month



of October not exactly the month for swimming exercises !

“Work for townsfolk chiefly consists in helping to fetch and carry ; but odd jobs turn up, such as catching a run-away horse, which requires pluck and smartness or, thoughtfulness, as in the following case :—

“A master saw a number of boys apparently walking aimlessly along the king’s highway, but he was mistaken ; they were not aimless, for they were searching the road for nails, which Kashmiri generally carry on the soles of their shoes. These nails have large, flat tops, which Kashmiri pedestrians seem to love to shed on the road, and therefore are just the sort of nail which the motor tyre loves to pick up, to the sorrow of the motor driver. The boys have in this way picked up a pound or two of them in the course of few months. The boys are useful on the riverside, for they not only spot boats floating aimlessly down the river (which seem to have escaped the notice of the riverside public), but they will catch them and will sometimes swim after them and paddle them back to their owners. In the days before we had got into our stride in the social service line, one of our own school boats was

discovered twenty miles below the city, for in those days no one worried about straying craft, except to annex it.

"On coming back to the city from the Wular Lake camp at Easter, we came to a bridge which had been swept off its supports at one end by flood water and blocked the fairway, so that big boats could only be towed through the remaining space with great difficulty, for the stream at that point was almost up to cataract force. There were certainly more than a dozen large cargo boats waiting to get through, so the boys set to work, lending the boatmen their own tow ropes and their own weight, which was not to be despised, for there were over thirty of them. They began at daybreak and worked on until 10 a.m., when they towed the last one through the crumpled bridge. There was now a big house-boat with a sick lady inside, besides our own boats, waiting their turn to come through, so the boys asked the boatmen for whom they had worked so long to give them a hand with this remaining lot, but they flatly refused and went away laughing; nor should we have obtained their help without heavy payment. The Kashmiri boatmen, like many other classes in this

country, look upon our boys as fools for giving service for nothing, but there have been increasing instances of late when Kashmiris are beginning to see that there is some sense in our madness. Anyway, I hear of fewer instances of fathers beating their boys for doing social service."

## CHAPTER XVI.

*To Think About.*

Do you think that the project method is applicable for teaching pupils of the High School classes ?

## PURPOSEFUL ACTIVITIES IN THE HIGH SCHOOL.

So far in India has been little experimentation with the project method in High School classes. There are, however, at least three projects described in *Projects in Indian Education*\* which have been carried out with pupils of High School age as well as several others which could be adapted to the High School. The following chapters of that book should be studied for examples of High School teaching by the project method: Chapter VI,—An Experiment in Trade—Chapter IV—Our Daily Bread ; and the Prologue, Questing for the Beautiful. As a further illustration the following account of a project carried out in the Ninth Class of a High School in America is very suggestive.†

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\* “ Projects in Indian Education ” Van Doren—Association Press, Calcutta.

† Other High School projects will be published in the *Moga Journal for Teachers* (Rs. 2-8-0 per year in English or Urdu) Moga.

The Ninth Grade of the Lanier High School for Boys, Macon, Ga., had been studying ancient oriental history for five weeks. They had studied the development of the civilizations of China, India, Egypt, Mesopotamia and Persia, and were about to begin the study of the history of Greece. They decided that they would like to work out a little play to show Greece at the beginning of her history receiving from the oriental nations the gifts they had to present.

The plan was discussed for some time. Several periods were taken up in preparation, and finally the play was presented in the regular history period of their class.

"The first step was to call for volunteers. They were quick to respond, a boy to represent each country. These in turn asked for assistants to help provide suitable illustrative material, so that practically every member of the class took part in the project. Except for suggestion in the matter of books, the whole thing was planned and executed by the boys themselves. When all was in readiness a period was given over to the presentation.

Greece, represented by the smallest member of the group, took a seat in front of the class.

Then the nations, like the wise men of the East, filed by, bearing gifts for this new-born child who held out eager hands. First came primitive man bearing a tray on which were placed flint for making fire, a tiny bow and arrow, a toy dog for the domestication of animals, some grain for the domestication of plants, a little clay vessel to symbolize the making of pottery, a bit of cloth to denote spinning and weaving, some stone implements (these were real ones used by Indians in our own country), and finally an engraved slab to betoken the beginning of art. Then came the nations, China, India, Egypt and all the others in turn, each bearing visible emblems in evidence of good faith, each making proper presentation and passing into the background.

“The following will illustrate one type of speech accompanying the delivery of gifts.

*Babylonia enters :—*

*I, Babylonia, about to die, herewith make my last will and testament. To you, Greece, prospective heir of all my life-work, I hereby will and bequeath.—*

*1st.—My method of agriculture and irrigation.*

*2nd.—My system of weights and measures.*

3rd.—*My process of making bricks and glazed tiles.*

4th.—*My useful sun-dial and water-clock.*

5th.—*My achievements in architecture, chiefly the tower-temple and the principle of the arch.*

6th.—*My plan of ornamentation, especially my bas-relief.*

7th.—*My advance in astronomy, notably the signs of the Zodiac, the fixed stars, the planets and, best of all, the calendar.*

8th.—*My system of government and the code of Hammurabi, the most elaborate set of laws written up to this time.*

9th.—*My knowledge of the world and its geography.*

10th.—*My easily formed cuneiform writing and the use of seals.*

11th.—*My literature, especially the Epic of Gilgamesh.*

12th.—*My stately religion.*

*That all of these are for your use as you see fit. I call Persia to witness.*

*Given under my hand and seal :*

*Babylonia.*

As each item was enumerated, some object was presented—a clay tablet with wedge-shaped



characters, a leaf from the front of an almanac with the signs of the zodiac, a bas-relief of Izdubar and the Lion, and so on.

“ Much ingenuity was shown in selecting and providing illustrative material. Egypt brought among other things a tray of ‘ desert ’ sand containing pyramids, obelisks, sphinxes, all modelled from grey lava soap, a proto-Doric column shaped from ivory soap, a canopic jar made of paraffin, an ‘ enamelled ’ hawk cut from wood, then colored, the ‘ Book of the Dead ’ done on yellow paper. Phœnicia offered a bottle of purple dye (there was keen competition in getting what was considered the proper shade), fine glass, a cedar of Lebanon (in this instance a little pine tree from near-by woods), examples of metal work, the alphabet, and boats. The Hebrews brought the Bible and two tablets inscribed with the ten commandments. Assyria carried a library, a palace, her triple arch, some tablets to explain her military system, a map to show a world empire. All the other nations were represented by some outstanding features of their civilization.

When finally Persia had passed on, Greece arose and said :

*Countries of the Orient, I thank you for your kindness in giving me such wonderful things. Though I am young and may not know how to use them all, yet I realize that with your help I shall be able to do great things, for I can begin not at the bottom, but half-way up. Some day you will be proud of me and then you can say, "We helped to start that nation;" and not only can you say that, but you can have a secret feeling of pride in knowing that you gave instead of taking.'*

"With this the act ended. It had served not only to summarize once more the contributions of each nation to the progress of civilization, but also to emphasise the fact that Greece was the heir of the Orient."

(Taken by permission from *The Journal of Educational Method*, November 1927.)

#### *To Do.*

Read again the statement made above by Babylonia. Make out a similar statement which the boy representing India might give.

Make out also a list of the illustrative material which might be prepared to represent India in such a project.

## CHAPTER XVII.

*To Think About.*

If you were teaching the project described in Chapter XIV, how would you plan your class-work for the first month ?

## SOME UNITS OF EXPERIENCE ANALYZED.

A number of projects have now been described in more or less detail (in Chapters VII to XVI.) To make more clear how projects develop in an average class-room, it may be helpful to study some of the monthly outlines that have been kept by Indian teachers. A method of guiding project teaching, that has been found helpful in India, is for the class, under the leadership of the teacher, to draw up a syllabus at the end of each month of what they plan to carry through during the coming month. A study of the following syllabi that have actually been used will show the possibilities of this method. After the class have had a little experience in such planning, the teacher will be astonished at the ideas his pupils will have, the things they will want to do and can accomplish, the enthusiasm with which

they will plan, undertake and carry through difficult work and the concentrated effort they will show because they have formed a purpose and set their minds to see it through.

The first syllabi given show the plans used in the second month, the fifth month and the seventh month of a Fourth Primary Class project of a Village Shop. Such plans were prepared before the beginning of each month by the teacher after consulting with his class.

*Syllabus for the second month.*

(1) *Arousing the pupils' purpose.*—By discussing the things used by pupils in their houses and where they were secured (also by observation of shops in the bazaar) the children were led to desire to keep a shop for selling supplies. As the village shop-keeper supplies the village needs, they decided to sell supplies to the school community.

(2) *Planning.*—Pupils decide how to make a shop, drawing the plan of the shop on paper, then drawing a big plan on the floor of the class-room. Pupils make a ruler (and compare it with a real one). Then they measure the large plan.

(3) *Construction Work.*—Building a shop out of bricks. Making the doors and windows

and other things required. Making the equipment required.

*Reading.*—Reading stories about various shops and their methods, also directions for building the shop. Reading advertisements of various shops. Also reading various stories for enjoyment.

*Writing.*—Writing the information secured and describing their plans in their project books. Writing applications, also letters and orders.

*Arithmetic.*—Measuring the length, breadth and height of the shop. Studying to get information about the rectangle and the square. Solving problems involving building materials and their costs.

*Nature Study.*—Studying the different kinds of wood used in the floor, doors and windows of the shop. Studying various vegetables and comparing them. Learning about flowers and domestic animals.

*Hygiene.*—Advantages of cleanliness in shop-keeping, protection from flies, need of air and light, cleanliness of person and of surroundings. Relative food values of different products.

*Bible.*—Learning about the various communities mentioned in the Bible, and their

business relationships, and reading other Bible stories related to the project.

*Agriculture.*—Preparing the land for the various vegetables and grains, study of various kinds of soil, preparation of the soil, sowing of the seed. When and in what way vegetables are watered, reaping and disposing of the crop.

*Syllabus for the fifth month.*

*Project Work.*—Collecting stores for the shop,—buying goods (a) locally, (b) from outside,—the methods of importing articles. The ways of sending money for the goods bought. Selling goods at wholesale price.

*Reading.*—For fluent reading—reading various stories from the text-book. Revising the lessons read in the previous month. Reading such books as the pupils can find which show the means and methods of importing goods.

*Writing.*—Writing of letters, applications and receipts. Replying to certain letters.

*Arithmetic.*—The methods of local business. Zamindari Banks. Practice on interest and revision.

*Geography.*—Studying the products, including manufactured articles, of various provinces, states, districts and cities of India.

*Nature Study.*—Collecting information about the potato, radish and turnip.

*Agriculture.*—The preparation of the soil for potatoes, radishes and turnips. The methods of sowing them, cultivating them at regular intervals.

*Industrial Arts.*—Where does cloth come from ? By what means does it reach us ? How do we use it ?

*Syllabus for the seventh month.*

*Project Work.*—Running the shop, *i.e.*, buying and selling at regular hours.

*Reading.*—Reading from the *Rasám-i-Hind* about the customs of marriage among the *banyas* (money-lenders).

*Writing.*—Entering the day's sales in the ledgers. Preparing the monthly bills for vegetables sold to the shop's customers.

*Arithmetic.*—Collecting the vegetables and making a record of the quantity in the ledgers. Selling vegetables according to bazaar rates. Memorizing some business rules. Memorizing tables of measure, as gross, dozen, etc.

*Geography.*—Trade with the Frontier Provinces. Information in regard to the Frontier Provinces. What articles are sent to these provinces ? What articles come from them ? What are the means of transportation ?



*Hygiene.*—Cleanliness of body, house, shop, school, dress, etc.

*Bible.*—Rules for fair measure. Ezekiel 45 : 10, Amos. 2 : 6.

The following second set of syllabi were kept by a Class VII in the second, fourth and sixth months of their project—*A Co-operative Bank* :—

*Syllabus for the second month.*

*Practical Work.*—Collecting the needed equipment for the Bank : preparing the books : starting the Bank, making the toy currency to be used. Beginning a co-operative store ; buying and selling different articles.

*Reading.*—Reading from books regarding co-operative banks, acquiring knowledge of the rules and regulations of different banks.

*Writing.*—Writing applications ; practice on preparing books, entering the rules and regulations on charts : recording important matters in the project books.

*Arithmetic.*—Exchange of articles in buying and selling, preparing bills, solving Unitary problems, solving Time and Work problems in constructing articles.

*Geography.*—Becoming acquainted with foreign countries, in collecting the articles for

the Bank Shop ; acquiring knowledge of foreign banks, studying different coins, sending money to foreign countries.

*History.*—History of the Co-operative Bank Movement : when it was started in India, the total number of co-operative banks in India to-day.

*Bible.*—Collecting gifts for the Tabernacle. How to spend one's income. The blessedness of giving.

*Syllabus for the fourth month.*

*Practical Work.*—Working in the Bank daily for half an hour. Preparing the ledger and admission forms, and forms for withdrawal and deposit.

*Reading.*—Gathering information from newspapers and books about the Co-operative Movement. Reading about Thrift Societies.

*Writing.*—Writing notices and letters. Filling in the account books. Writing in the project books and answering questions.

*Arithmetic.*—Book-keeping. Computing the average of money which the classes have deposited and which the whole school has deposited. Solving other problems of this sort.

*Geometry.*—Simple construction, as parallel lines, perpendicular distance, dividing a

straight line into any number of equal parts measurement of angles, use of protractor and set-squares.

*Geography.*—Population of Asia as a whole and of each country.

*History.*—Learning about the ancient Hindu civilization.

*Syllabus for the sixth month.*

*Practical Work.*—Keeping the Bank clean. Arranging the articles for sale in an orderly fashion. Running the Bank and the Shop daily.

*Reading.*—Reading descriptions of other banks. Finding out the rate of interest in different banks. Reading books and newspapers.

*Writing.*—Writing the information secured in the project books. Preparing new charts, etc.

*Arithmetic.*—Crediting the depositors with interest. Collecting interest for the debtors. Learning book-keeping through the daily work of the Bank.

*Geometry.*—Revision of methods learned. Learning different figures, *i.e.*, right angle, triangle, parallelogram.

*Geography.*—Preparing a big map of Africa. Study of the route from India to Africa.

Securing information regarding Australia.

*History.*—The beginning of trade of the English in India.

*Bible.*—Completing the charts about fair dealings, begun last month, and hanging them in the room.

The next syllabus shows a single month, the second, of the work of the First Primary Class in *Building a House*.

*Syllabus for the second month.*

*Conversation on Project.*—Finding out how the walls of the house can be made strong. Visiting and studying a building and then planning to build the walls of their house.

*Project work.*—Making more bricks for the house. Arranging them in order. Measuring the foundations of the house.

*Urdu Reading (Story Method).*—Revision of stories learnt. Reading of new sentences connected with the work of house-building. Making new sentences from the stories read and reading them.

*Writing.*—Practising on the blackboard the writing of stories read. Writing on the earth with sticks.

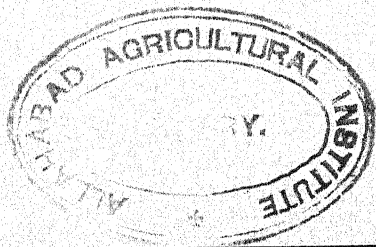
*Arithmetic.*—Counting the bricks of one layer of the foundations and keeping an account

of the bricks used in all the layers. Finding out the total number. Learning the concept of a foot and an inch.

*Geography.*—Finding out what trees give us wood for doors, windows and roof, and how this wood reaches us.

*To Do.*

Write out a plan for the first month of the project described in Chapter VIII.



## CHAPTER XVIII.

*To Think About.*

Do you think project-teaching can be introduced in the ordinary school?

What are the difficulties?

How can they be overcome?

## PROJECTS USED IN INDIAN SCHOOLS.

Projects are of many kinds. Dr. Kilpatrick classifies them into four main types: *producer's* projects, in which the purpose is to produce something, or construct something; *consumer's* projects, in which "we learn to consume, use, enjoy or appreciate," *problem* projects "in which people are set on solving a problem or clearing up an intellectual difficulty"; and "*specific learning*" projects, in which "children feel the need for drill so as to perfect themselves in some skill, and purpose to become proficient," by means of drill for speed and accuracy.

A more lengthy description of these four types of projects can be found in Dr. Kilpatrick's books.\* The four types are mentioned here mainly to show that projects may

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\* "How We Learn" pp. 67 and 68.

be of many varieties, and are not merely or always pieces of handwork or construction.

It is helpful to remember that all projects do not occupy a long period of school-time. Some are finished in a few hours, some hold the pupils' interest for a few weeks, and some are so rich in interest and connections with life that they keep a class actively learning for a whole school year. In Miss Van Doren's book, *Projects in Indian Education*, many examples are given of both Major and Minor Projects.

A list follows, at the end of this chapter, of seventy-seven projects which have been found interesting and successful in various schools. Of these enterprises the majority have been carried out in Indian schools. The last few have been selected from schools in the West as especially suggestive of new lines along which project teaching in India may develop.

These are all whole-hearted purposeful activities chosen by the pupils and carried out under guidance in a natural setting. It is necessary to repeat that the essential quality of a project is its spontaneity. It should grow out of the purpose of the pupils. Therefore



the teacher who chooses from this list a project and imposes it upon the class is doomed to disappointment. The list, and the previous examples, are given merely to show what has been found possible when children were allowed freedom to carry out their own purposes :—

Improving skill in mental arithmetic—Primary Classes.

Canal project—Village School.

Celebrating Armistice Day—High School Classes.

Planning a service of worship—Class I.

Study of leather—Class III.

Building a house—Class I, Class IV.

Study of wood—Class IV.

Raising silk-worms.

Making soap—Village Schools.

Appreciating the Shepherd Psalm—Class I.

Building a potter's house—Class I.

Study of Village education—Class VII.

Cotton—Class III.

Lumber Industry—Class V.

Raising poultry—Class I; Class V.

Making a book of hero stories—Class VIII.

Commerce—Class IV.

Running a school bank—Class VII.

Making a relief map of Palestine—Middle and High School Classes.

Making a model of the Solar System—Class VII.

Making and using a sun-dial—Class IV.

Keeping a hen—Class I.

Keeping records of nature observations—All Classes.

Caring for school pets—Primary classes.

Building a house for the teacher—Village Boarding School (Village Teachers' Journal, July 1927).

Making a story book for younger pupils to read—Class IV.

Improving the class standard in spelling—Fourth Standard (Village Teachers' Journal, October, 1930).

Planning and building a house—Class IV

Furnishing the house—Class V.

The clothing of the home—Class VI.

The food of the home—Class VII.

Child care and training—class VIII.

Making a poster on the value of eating vegetables—Class V.

Making an illustrated chart on which to record the progress in weight of the class—Class IV.

Making a poster illustrating a balanced diet—Class V. (Christian Education).

Making a poster to make clear to village mothers how babies should be taken care of—Class V.

Planning and estimating the cost of the equipment of a school infirmary (choosing pictures for the walls, etc.)—Class V.

Co-operative Bank—Class VII.

Building a Model Village—Class VII.

Celebration of Diwali—Ungraded village school (Moga Journal, January 1931).

Giving a Christmas drama—Primary Classes.

Co-operative School Stationery Shop—Class VI.

Making Christmas gifts for parents—All grades.

Camel project.

Making Christmas gifts for a village school—Class II.

Forestry—Class IV.

Celebration of Guru Nanak's birthday—Village School.

School flower garden.

A bazaar project—(Village Teachers' Journal, Feb. 1930).

Celebrating Easter—High School (Village Teachers, Journal).

- Caring for a parrot—Standard I. (Projects in Indian Education)
- Representing a Bible story on the sand table—  
Standard I (Projects in Indian Education)
- Making clothes and furniture for dolls—  
Standard I. (Projects in Indian Education).
- Circus—All classes.
- Chickens—Standard IV.
- Rabbit project—Standard IV—(Projects in Indian Education).
- Keeping Shop—Class II, Class IV.
- Improving the school diet—High School.
- Entertaining the parents—All classes.
- Running a school paper—High School.
- A Chinese home—Class II.
- Cutting out a wall friese for our school-room wall.
- The village—Third Standard.
- A Project on Arab Life—Primary or Middle classes—(Village Teachers, Journal, June 1924.)
- House cleaning—Fourth and Fifth Standards.
- Making an illustrated book.
- Making and decorating a book-cover.
- Making musical instruments for their own use.

Study of boats.

Investigating the milk-supply of the city.

Improving the penmanship of the class

—Various classes.

Study of Wool—Primary Classes.

Running a bank—Class VI.

Australia.

A bird project—Middle Classes.

Wheat—Primary Classes.

*To Do.*

Choose one of the above projects and work out a detailed plan for it, similar to that given in Chapter XIV.

## CHAPTER XIX

*To Think About.*

A teacher accustomed to formal types of teaching wishes to change to the project method. How should he begin?

## HOW TO BEGIN.

The Project Method, as you now see, is not so much a method as it is a principle. It is an attitude towards the pupils. The principle is not only applicable in carrying through special activities but should be used in all of the work of the teacher. The school in which this principle rules becomes a child-centred school where pupils are encouraged to do and think and plan. Having grasped the principle, the teacher must see his profession in a new light. His own satisfaction and success in his work will be measured by the amount of real whole-hearted participation by the pupils in all the work of the class.

Determine to make a beginning at once. Begin where you are. Dr. Kilpatrick suggests that the teacher start by setting aside one period a week as a free work period. The teacher should explain to the pupils that in this period they are to undertake something

which they wish to do, which they are to choose for themselves, with his approval. They are to plan the enterprise they have chosen. The teacher reminds them that he is present to help if he can, but the work is to be theirs. As I shall show in a later chapter, the pupils may need considerable help in the beginning, as they are not likely to think of the school-room as a place where they may undertake interests of their own. The teacher may have to suggest and guide in the beginning of the work. But as the children grow in their co-operation with one another and their ability to plan, the teacher's help will be less needed.

When this one period a week has become a success and the teacher through experience is learning how best to lead the children in the work, the time can be increased to one period a day. Gradually the amount of time given over to pupil-chosen activities can be still more increased, as the pupils learn to use their time to the best advantage and get the maximum amount of growth and education from their work.

As was said, the teacher must get the children to think. This will not be easy at



first. They will need to be accustomed to express their opinions in class and work with one another and divide up responsibilities among the group. Previously their opinions have been ridiculed or at least not taken seriously by older people, with the result that the expression of their ideas has been suppressed. They must now cultivate not only thinking but expressing their ideas clearly. Under healthy stimulus children quickly develop ability to think and to express their ideas. The teacher, too, must think himself in order to lead the children in their thinking.

It is very essential to the success of project teaching that the teacher be well acquainted with the interests of the pupils, with the things they like to do. One of the best places to get acquainted with your pupils is on the playground. Some knowledge of their home life is very necessary. You cannot help and guide the children unless you know what they are really interested in. Your success will depend on your ability to know your pupils.

Do not attempt a major project at first. Begin with something simple : the celebration of a festival, a project growing out of the season—spring planting, harvesting, etc., are good

possibilities. Help the pupils to select some subject that has considerable inherent interest in itself. Do not be discouraged if your first attempt does not produce all the educational results secured by teachers in some of the projects reported here. Good teaching requires much practice. It is better to make one small improvement so successfully that you and every one concerned will gladly progress another step forward, than it is to try to copy an elaborate enterprise devised by some one else.

Do not impose a plan on your class. Let the class develop something out of their own interests. Leave the pupils to choose subjects for study (the project) on the basis of which they will learn with satisfaction and profit. The project should grow out of some social situation or problem, the solution of which should result in genuine satisfaction to the individuals working it out.

*To Do.*

Make a list of festivals and events during the school year which children might celebrate.

Get together a small group of children whom you can meet daily for two weeks, and help them to prepare for the celebration of some festival, or school event.

## CHAPTER XX.

*To Think About*

Should children "do as they please" in school ?

## CHOOSING AND PURPOSING.

Dr. Kilpatrick says, "The part of the pupil and the part of the teacher in most of the school work depends largely on who does the *purposing*. It is practically the whole thing." The teacher may himself do the purposing and get the class to accept what he has purposed. But there is not much educational development for the pupil in that, and whole-hearted co-operation from the pupils seldom results from teacher-purposing. The stronger the pupils feel the purpose and the choice as their own the better will be their planning and carrying through of the choice.

The important thing is that the pupils conduct as their own the work which the class is about to undertake, so that their teacher is a person helping the class to do what the class wishes instead of inducing the class to do what he wishes. This is so important that it cannot be too much stressed or too carefully planned for.

How can the teacher get the fullest co-operation from the pupils in choosing ?

The following is a technique which is used by many teachers. When the class or group has been led to the place where they see possible projects or possible purposes which they may select from, let each pupil, who has selected some purpose, propose it to the class. Have all of these listed on the board as they are suggested. Then give time for each pupil who has suggested a possible topic or project to speak in favour of it. Let him tell why it appeals to him; how it can be developed, what would be its advantage to the whole class.

After hearing from all of these pupils, give opportunity for a full discussion on the part of the whole class. The teacher should stimulate the discussion, by means of questions that will bring out other points of view. The teacher should encourage different expressions of opinion. Certain projects or suggestions will be eliminated very easily. A few may still be left on the board which may take several days of discussion during the project period before the choice narrows down to two or three. In all that time the pupils' interest has been

stimulated. They see the possibilities of certain developments. They are taking sides.

The teacher must then bring the class to a united decision to follow out one of these possibilities. It may be necessary for the teacher here to give some instruction in citizenship, in the rule of the majority for the good of the group. But the final choice made must be the choice of the pupils themselves and the pupils must so feel it keenly. Some one has said: “(1) Allow the pupils freedom to suggest goals to pursue ; (2) Allow the pupils freedom to suggest desirability and practicability of the suggested goals ; (3) Allow the pupils freedom to express a preference for or against a suggested goal.”

In helping the pupils the teacher must keep in mind that the project lesson must meet some felt need of the pupils—some thing they really want to do or find out. The earnest and worthy purpose is at the heart of success in project work. The purpose must be common to the group. It must be accepted by all. Comradeship and good-will is necessary for the carrying out of the project by the class.

It is possible that pupils may choose wrongly or at least may desire to do something which will not meet with success. The teacher

must use his own wisdom in deciding the position to take. Sometimes the pointing out of certain factors not yet considered may be sufficient to show the pupils that their choice is not good. But sometimes it may be better to let them try out what they have chosen so that they may learn their mistakes by experience. I remember a three-day project in a practice teaching class, when the Third Primary Class insisted that they wanted to make a table in three days. The pupil teacher tried to guide them away from this purpose. In response to his questions they still insisted that this was what they wished to do. Instead of arguing further with them, he said "All right ! Let us do it. We shall need to go to the school carpenter for material and for help with our plans." When they sat down with the carpenter and began to work out plans for getting the lumber, preparing it, and other details, they were quick to see that they had much more than three days' work. They themselves abandoned that purpose and sought for one that had possibilities of success in it.

A valuable form of composition for the class will be writing out the reasons for the decision they have made. Pupils are always



interested in making books about their project, and the statement of their purpose with the reasons for choosing it, will naturally form the first chapter of the Project Book.

*To Do.*

Help the group with which you are preparing a festival celebration (see *To Do* Chap. XIX) to choose what they want to do. Use the method suggested above.



## CHAPTER XXI.

*To Think About.*

In your own experience, is failure often due to lack of planning ?

## PLANNING.

The second step in carrying out a project, is making a plan. How much of the planning should be done by the teacher ? Of course, a better plan could probably be made by the teacher than by the pupil. But how are they to learn planning if they do not plan ? It is essential in project teaching that the class should plan the enterprise. This does not mean that the teacher is not to enter fully into the planning and take his share in the discussion of the plan.

In the first place, the teacher's part is to call attention to the need of a plan and provide an opportunity for the planning. He will try to enlist the co-operation of every member of the class, encouraging those who are backward about speaking up. He will point out difficulties to be met. He will question the judgment of the pupils in the different plans. He will keep the goal in view before the class

and try to secure a plan which will carry the purpose through. The whole class will feel a share in the plan because they have had an opportunity to help in the making of it.

The big thing is for the pupils to take as their own the class purpose or project and greatly desire its success. They will then enter fully into the planning of it in order to bring it to successful completion. You cannot expect much considered thinking on the part of the pupils in the planning, if they consider the project to be the teacher's purpose and not their own.

Do not expect the pupils to see all the details of the plan at once. You will probably find many things developing before the work has finished that you had not anticipated yourself. The class may have to stop many times before the project is completed, to do more planning to meet new and unexpected situations that arise, you must help the pupils to see that they must plan and think through situations if they are to expect success.

The teacher in all of this must do a great deal of planning himself before the lessons. If he thinks that the teacher's work is merely looking on or letting it all be done by the pupils, confusion and failure will usually follow.

The teacher must think out before each class the probable lines of development the pupils will wish. He must be ready with two or three possible leads, and be ready to help the pupils with that one which they chose to follow. If the pupils' plan is a good one, even though it is not one he had foreseen himself, he should not kill their interest by opposing it, just because it did not fit in with his first idea. If the pupils' plan is wrong or likely to lead to wasteful or harmful or uneducational results, the teacher brings this out by questioning. He requires them to think it through, and helps them to come to their own conclusion that they are on the wrong track.

A practical point to be remembered is the value of writing out the plan. Teach the class to prepare in outline form a brief plan of their project. In construction projects a drawing of the article to be made, or a plan to scale, is often made and entered in the Project Book.

In the beginning of project work teachers sometimes ask how they can possess enough information to answer the pupils' questions. Such teachers consider that, for the sake of their honour and dignity, they must never

acknowledge before the class that there is anything they do not know. Such a teacher is bound to fail in project teaching. For there will arise many situations and many occasions when information or processes are needed which the teacher cannot know. The teacher will only win and hold the respect of his class by frankly telling them that he does not know. Then teacher and pupils together must search and find the answer. Such a spirit arouses the increased interest of the pupils and wins loyalty to the teacher. The information can then be found either in books or magazines or by inviting to the class-room somebody who is informed on this matter or by writing to some authority. The teacher truly is the big brother or sister and co-worker with the pupils as he grows with them.

*To Do.*

Help the group with whom you are working (See *To Do*, Chapters XVII and XVIII) to plan their celebration.

## CHAPTER XXII.

*To Think About.*

Have you ever seen an older person laugh at the crude drawing of a child? Have you ever seen a teacher throw away a map or a piece of clay modelling which represented real effort on the part of the pupil? Have you known a teacher to choose only the best piece of hand-work for a school exhibition, and touch it up a little to make it more perfect? What do you think of these practices?

What preparation will a teacher need to make when his class is carrying out a project?

## EXECUTING.

Remember that this is the pupils' project and not your's. Let them do the work.

One of the first signs that a teacher has grasped the new project principle is that he lets the pupils do the work. He helps them to do the best they can, but the work is really theirs. It is a great temptation for a teacher to help too much, or even to do parts of the work himself in order to produce a more finished product. Of course it will probably look

better if the teacher makes it himself. But he must remember that his object is not a perfect piece of work, but the maximum amount of learning by the pupils. A crude result may mean a large degree of genuine learning and good teaching. The teacher should be careful to give the class plenty of opportunity to execute their own projects.

This does not mean that the teacher will let the class waste time and flounder. The educational possibilities of the project will always be in his mind. He must see that the maximum amount of learning from each process is secured. Some Fourth Year pupils had modelled various clay articles, and one member of the class suggested that they bake them. The class took this up at once. They visited a potter to find out how he baked his pottery. They prepared a kiln to carry through the process. They were so much interested in the process that they did not leave the fire undisturbed, and when the articles were taken out only a few were actually baked. Some of the class then proposed that they prepare a large kiln and make a large number of clay articles. The teacher persuaded them to discuss the question of what they would learn if they carried out



this big plan. They had already learned the process, and the mere building of the kiln would take a great deal of time. When under the teacher's guidance they faced the things they really wanted to learn, they decided that building the big kiln would be wasting time.

Much interest will usually be aroused if the class form the habit of recording their progress in the Project Book. Interesting pictures will begin to appear in the book. Special investigations and directions for parts of the work will be recorded.

Many projects if carried out, for any length of time, reach a place of stagnation, *i.e.*, the interest lags before the project is completed. Interest created at first is not quite sufficient to carry the project up to the point where new interest is created by the nearness of the completion of the project. The teacher must watch for this time of lagging interest and introduce a new stimulus. Occasionally the teacher must simply insist on completion, pointing out the waste of time and work involved, or he may even have to sting the class pride with his scorn. But the class must be brought to a desire to complete its work.



In some instances the class must be allowed to fail, but in that case the failure must be so evident and the shame to all concerned so great that they will realize the seriousness of their lack of persistence or their poor planning.

Success is a great stimulus. The success attained in a part of the work or in a minor project that grows out of the major one, will be a big factor in holding the pupils to their purpose and completing the whole project which they have undertaken.

*To Do.*

Guide your group in carrying out their plans for the celebrations,

## CHAPTER XXIII.

*To Think About.*

When you have completed a piece of work, do you think it over and judge whether you have done it well or not ?

Does this habit of judging the results of your enterprises tend to improve your habits of work ?

## JUDGING.

In life we are constantly judging the results of our work and of other people's work. The purposing and planning and executing are stages in most work done. There is then a final stage, when the work is judged as to whether the purpose was carried out successfully, whether the result is of value, etc.

This stage of judging is very important in project teaching. It should never be neglected. On the completion of the project or at certain stages in the project the work should be reviewed and the pupils brought to judge their work, noting errors in choice, in planning and mistakes in performing. They should consider what lessons they have learned from the project they have carried through. What

has been learned which will be of use in another project ? The teacher will find that the pupils are excellent judges of the success or failure of their work. Further, the teacher should help them to discuss such questions as, how can we learn to work better next time ? What good habits have we learned that we wish to practise all our lives ? A statement of the results of the enterprise should be written in the Project Book.

The pupils should consider also the subject matter which they have learned. "What facts have we learned that we want to remember always ?" they should ask. They may consider what part of the Government course of study for their class they have covered and also what has been learned that is beyond and outside of course of study. Many classes which use the project method do this at the end of each month. Summaries of subject-matter learned should be entered in the Project Book.

The teacher must also in his private study carry through the stage of judging. He might well consider what has been the effect of the project on the class as a whole. Is there better appreciation of one another's ability ? Is there better co-operation and less selfishness ? Is

the class working together more as a unit ? Is there increased interest in their school life as a whole ?

The teacher might well consider the effect of the project on the individual pupil. Has his sense of accomplishment been increased ? Does he have more sympathy with and appreciation of others ? Is he purposing to grow more in accomplishment next year ?

*To Do.*

With the group you have been leading carry through the stage of judging the results of the project.

## CHAPTER XXIV.

*To Think About.*

Try to imagine a time far back in history, when there were no multiplication tables. How were they gradually built up?

ORGANIZING WHAT HAS BEEN  
LEARNT.

In the preceding four chapters we have outlined the four main steps in project teaching. We must now turn our attention to several phases of the teacher's technique which are worthy of special emphasis. These are so important that deficiency in any of them is likely to wreck a project. One of these steps in learning, to which we shall give attention in this chapter, is the *organization of knowledge*. It is important that the teacher should help the pupils to gather together what they have gained in carrying out their project, and arrange it in their minds. Clear ideas and definite habits are the result of good teaching ; but many beginners in this method are apt to neglect this step.

The project method approaches knowledge from the child's point of view. This is quite opposite to the way the school usually teaches. The teacher or the text-book begins at the logical beginning of a study, and proceeds by logical steps to build up knowledge. Take the study of Arithmetic, for instance. Arithmetic is an organized body of learning, arranged logically. In its present form it is a logical sequence of facts and processes which have been learned in the experience of the race. Educators have chosen from the experience of the race those arithmetical facts and processes needed by the adult in this modern age. These facts and processes are taught through a graduated system to children.

Life, however, teaches the child in a very different way. Naturally, the child does not acquire knowledge logically. Notice how he gains his knowledge of a flower. He looks at the flower as it is. From that he begins to question how the flower grows and what it has come from. If he is helped by a skilful teacher, he comes, from studying the flower as it is, to understand about the plant, the seeds and their germination, the need of sunshine and water, and much deeper knowledge.

Flower in the crannied wall,  
 I pluck you out of the crannies ;—  
 Hold you here, root and all, in my hand,  
 Little flower—but if I could understand  
 What you are, root and all, and all in all,  
 I should know what God and man is.

(*Tennyson*).

Now, notice that the child does not learn all this by beginning with the seed, which would be the *logical* beginning. He starts with the present interest and builds up his knowledge from that.

Outside of school, both children and adults acquire most of their knowledge, bit by bit. Each fact or process is learnt in connection with a present interest. To go back to the illustration just used, the knowledge of arithmetic itself was acquired that way by the race. The multiplication tables, the tables of weights and measures, the various methods and processes, were first discovered as isolated facts connected with experience. Later they were *organized* into a logical sequence.

The project method follows this psychological order of learning. Knowledge grows



out of the experience and the felt needs of the child. But the project teacher who stops with the immediate experience of the child and does not cause that to become the door which opens to the child's mind the related facts and an understanding of the process, cannot give the child the full educational value of his experience.

In the development of the project the pupil gets bits of information here and there which keenly stir his interest and imagination. Unless the teacher helps the pupils to organize that knowledge and relate that experience to a large body of interest and knowledge, the result of the year's work may be very scattered. The results of the project teaching may sometimes be a hodge-podge of information and interests. This is because the teacher does not understand all the technique of project teaching. He has used the project method incompletely. He has neglected to lead his pupils to relate the information they have acquired to other knowledge. He has omitted to help them to consider and make definite the useful habits they have learnt. He has failed to lead his pupils to gather together and *organize* what they have learnt.

There is provision in the project method for this organization of the knowledge gained into a logical sequence. As the class pursues its purposes and its plans in the development of a project, they will find that there are gaps of knowledge to be filled in. The teacher will see that those gaps are bridged. He will see that the holes are filled in. The bits of *knowledge will be finally fitted into their places in the general whole*. But the difference between this psychological method and the usual logical method is that the organization of this knowledge is a later step following experience, instead of a first step preceding experience.

Take again the example of arithmetic and nature study. The multiplication table should be built up by the children after they have ample experience with the isolated concrete facts which belong to it. The child should learn about the germination of seeds, the influence of soil, water and sunshine, but this knowledge grows out of the experience the child has with nature. It should not be learnt by rote from a text-book. But in both cases, in arithmetic and nature study, the children should be helped to build up for themselves an organized body of useful

knowledge. The teacher must see to it that the interest and purpose of the children yields the largest educational value.

A good illustration of the place organization of knowledge should have in the project method is found in the teaching of definitions. Many text-books *begin* with definitions. The children memorize them with difficulty and without interest. There is no life in this kind of learning. Suppose, instead, that the children first had the actual experiences with the object or process to be defined. Interest and understanding would accompany the learning. As a final, not a first, step, the children, with the teacher's help, would formulate the definition, and learn it. Would not that definition be *better* learnt?

In daily life and in school also we do not follow only momentary interests. We must have purposes. We must relate what we are doing to our purposes. We must see more than the thing in hand. We must consider to what the pursuit of this interest will lead. We must bring to bear on the subject past experience and other experience we are securing from others by conversation or through books. Our interest or purpose leads to a widening of

our horizon and understanding of many things that had not been considered by us previously. Finally, our interest in the new knowledge leads us to gather it together and organize it into a logical whole. It is the teacher's duty to see that this process is fully carried out in every project of the class.

*To Do.*

Read again the 4th class project (p. 99) described in Chapter XV. Make a summary of the Arithmetic probably taught through this project.

## CHAPTER XXV

*To Think About.*

In which of the following situations have you learnt the most of a school subject (as geometry, for instance) ?

- (a) When you were studying in school ?
- (b) When you were preparing to teach it ?

## RECORDING WHAT HAS BEEN LEARNT.

One of the best means for carrying out this organization of knowledge is through the Project Book. Each pupil of the class should keep a record of the development of the project. There is also a special class book in which pictures are pasted and pupils are privileged, through vote of the class or through competition in quality of work, to enter their contribution. This is the permanent class record. In this book the class gathers together and records the information and the new habits gained through the project. In this are entered the related facts and the results of the investigations made or the construction work done. The class should learn to work

out summaries and outlines of subject-matter, and of their habits and attitudes.

The motive for this organization and this thorough grasp of all that is related to the interest in hand is the desire to pass on to others this interesting knowledge gained. The pupils enjoy taking their books home to show to parents and friends. The class Project Book can be presented to the library where it becomes a permanent record of what these children learned and how they learned it. It will be a help to other classes who choose to study the same or related subjects.

Another way of passing on the results of a project to others is through a school assembly. A class may invite the school to hear the interesting things they have found out. They will plan a programme in which selected pupils will read their reports from their project books. Charts and pictures may be displayed and explained, stories told and a summary of information given.

In order to make a good Project Book or prepare a lecture of entertainment for others the pupils will feel the need of arranging in logical order the subject-matter learnt. They must form a purpose to organize their newly

acquired knowledge. To do this they will choose the important facts which they discovered in the project thus far. The question may be asked: *What facts do we wish to remember always? What is there that we have done this year that we want never to forget?* In answering questions like these the pupils will get valuable practice in making brief summaries of information.

A most interesting project of entertaining the parents of the pupils was carried through in St. Paul's Lower Primary Boys' School, Ranchi.\* Class IV undertook to plan and carry through all of the arrangements for the prize-giving day, including the preparation of invitations, the receiving of the guests, the giving of a drama prepared by themselves, preparing the school for the occasion and cleaning up after the celebration.

"Then Class IV proceeded to make a most attractive record of their entertainment in book form. This gave much scope for the exercise of neatness, good writing, a composition and drawing. It constituted an excellent form of revision too, had such been needed. The book was of foolscap paper, bound in a

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\* "Project in Indian Education," Van Doren, pp. 48—53.



stiff blue cover, with gay red corners, and bore the poster picture. Inside was a copy of the invitation, an envelope and a programme. Then came the programme in detail. The poems for recitation were written out in full. The stories of the various short plays were also written, with coloured illustrations on the opposite page. Last of all came a delightful drawing of the Beginners' Reading Lesson, with a cleverly drawn easel and blackboard, and on the latter was the first stanza of the Little Red Hen story and in front a most realistic group of pupils !

The making of the book was a very valuable part of the project, and for a long time it was shown to visitors with great pride !

These two methods, *i.e.*, the preparation of a Project Book and the preparation of a school assembly or exhibition for visitors are adaptable to nearly every project, and will be found very helpful in conserving the results of learning.

#### *To Do.*

Choose one of the projects described in Chapters VII—XV. Make out a programme through which the class might demonstrate and explain to others what they had learnt.

## CHAPTER XXVI.

*To Think About.*

How much practice is necessary for you to learn a new fact so that you will remember it a long time ?

## THE IMPORTANCE OF RETENTION.

In the last two chapters we have spoken of the importance of helping the class to make and record summaries of what they have learned. But there must be a further step taken in order to make of more permanent value the interesting and useful information and habits the pupils have acquired. There must be repetition in order to retain what has been learned. How can this repetition be made most effective ?

The skilful teacher will try during the project to stimulate interest in repetition. Repetition with attention is needed for permanent learning. Forced repetition does not accomplish the purpose. The pupils' interest must be enlisted. They must *purpose* the repetition. The repetition must be felt by the pupils to be needed. If it is so felt, then whole-hearted activity enters into the work of repetition and makes it more effective.

The repetition or drill work then becomes an auxiliary project. The pupils feel it as a real need, and they purpose, plan, execute and judge their work of practice or repetition. They carry out in this auxiliary project all the steps used in the major project. The following illustration from experience is worth consideration.

The Third Primary Class had a shop project. Different pupils in the class were chosen by the class as shop-keepers and they sold various things to the pupils who came with their wants and their toy money. Alfred asked to be shop-keeper but the pupils did not choose him. When the teacher asked why this was so, they replied that he was too slow in making change and there was no fun playing shop with him. The teacher asked whether Alfred could be helped so that he would be able to make change quickly. The pupils were interested and asked the teacher if he knew any way that they could help Alfred. He then showed them some cards with addition combinations printed in large figures on them. The pupils quickly saw that if Alfred would study and practise with these cards, making change would become a very easy matter for him. They were so

taken with the idea that they decided that the whole class needed the help of this method to improve their proficiency in shop-keeping. The class then voted to have 20 minutes of drill every day on these addition combinations. The teacher was ready for this and carried out the plan in such a way that the class kept their interest through many periods of hard practice. The desire of the children for accuracy naturally developed this plan for drill work which resulted in retention of this learning.

This may be applied in every project. A project if skilfully guided will yield plenty of needs for practice of some skills of reading, writing, spelling, arithmetic, for memorizing poems, etc., and many other permanent learnings.

#### *To Do.*

Choose a project described in Chapters VII to XV, and make a list showing what facts and habits should become permanently fixed in the pupils' minds and characters. How would you secure sufficient repetition of these ?

## CHAPTER XXVII.

*To Think About.*

Suppose a class wished to make an out-of-door relief model of the Himalayas. What reference material should the teacher collect and have ready? What construction materials?

## THE TEACHER'S PART.

In project teaching the teacher does not abdicate. Though his place is not that of a dictator or commander, he still does not cease to lead when the need arises. His relation to the pupils is more intimate than it is in the usual school. He is a guide, an older brother, who works with his young friends and with his older judgment helps them to avoid mistakes and work more efficiently. He is more like the chairman of a meeting. The group or class has a purpose in view but cannot reach it without order and system. The chairman helps to keep the purpose before the pupils and helps to see that each thing done leads towards that purpose. He will encourage and give help when needed. He will help to show why a certain plan has failed and what better way might be tried next time. He will help to

see that the reticent pupils are brought out and take their part and the more forward pupils are held in check. He will help to keep the end in view so that as little time and energy as possible are used needlessly. He will not claim to know everything but will be willing to learn with the pupils.

Although the project method encourages pupils to plan their own purposes and carry out their own plans, the teacher is not thereby relieved of any responsibility. It is still his duty to build character. He is developing a democracy, but, like the best democracies, it is a controlled democracy. The pupils are to have as large responsibility as they show themselves capable of, and they are encouraged to take increasing responsibility. If they do harm and are not willing to consider carefully and weigh their actions and ask the advice of others, they are not yet ready for the fullest assumption of responsibility. But ability to take responsibility grows through being increasingly trusted, and through carrying out successfully the responsibilities which have been assumed.

The teacher is not to select the project and foist it on the class. But it may be

necessary sometimes to help the pupils to find a project. A project may naturally grow out of the celebration of a season, or a festival or a national holiday, or a project may be occasioned by some event such as the opening of a canal in the neighbourhood or the building of a well or a dedication of a building, the visit of some official or the spread of an epidemic. At other times it may be necessary for the teacher to prepare the way for a project. A teacher might have in the room certain pictures or articles that would suggest certain projects to the pupils. Or the teacher may read an article to the class that is likely to create a desire on the part of the pupils to find out more about some place or an industry or a people. The teacher may take the class on an excursion to the bazar or to a mill or to some historic place. Such an excursion may start questions from which a project may develop. The teacher should "organize situations so as to call out desirable responses and make them satisfying."

The teacher should not make the plan or choose the project ; nevertheless he needs to have a plan and to think out beforehand its possible developments. He should be ready to accept the lead chosen by the class and help



the class to carry out its purpose. To do this successfully he must be ready to see possibilities and to make suggestions. After the pupils have had experience with projects they will not need much suggestion or help from the teacher in initiating a project. We know that the imagination of the child is richer than that of the adult if given an opportunity for expression. In teaching by projects, this power of imagination is encouraged.

The teacher may find that the projects suggested by the class are not rich educationally and are not such as lead out to helpful activities. The teacher then by questioning and suggestion should lead the thoughts of the pupils into other channels and new lines from which a project may result.

The project teacher as he grows in his work will be constantly on the look-out for project material and he will surround his pupils with such material. He will have books available for pupils to read. Clay will be handy for making things. Wood and simple tools will be in the class-room or he will know where they can be borrowed if need arises. He will gather pictures of all sorts that have educational worth for children. He will find that

coloured chalk, a supply of paper, scissors and other tools will be of use.

This does not mean that an expensive equipment is necessary for project teaching. Many schools that do the most successful project work have very poor children in the school and spend almost nothing of school funds for these projects. Paper is very cheap and a few pice expense from each pupil will be plenty. Coloured chalk can be made by using simple bazaar dyes. Reeds can be gathered from river or canal bank, and seeds from trees or flowers. Pictures from second-hand magazines from the bazaar and a cheap pair of scissors will do wonders. Carpenters are sometimes willing to let boys or girls come to their shops and use their tools under the teacher's supervision, for making some simple article in the project. Sun-dried bricks and clay will serve to make houses, utensils, mountains, villages, animals and even a whole solar system in miniature. Remember that the imagination of children is more active than that of adults and they can easily be led to see.—

Books in running brooks

Sermons in stones....

In all project teaching the teacher must help the pupils to get the most out of each experience. To one person a star is merely a light in the sky. To another that star is part of a vast system of planets, of suns and an inestimable number of heavenly bodies rotating in their orbits and controlled by great laws. The teacher must lead the child to open his eyes to the vast possibilities about him and help him to search and find. The teacher helps best when he helps the pupils to help themselves. Lead your pupils to make the most of every experience. This is the key to the project method.

*To Do.*

Make a list of five qualities which you think most important for a project teacher to develop in himself.

## CHAPTER XXVIII

*To Think About.*

How do you know what pupils ought to learn at a certain age or grade ?

## THE TEACHERS' STANDARDS.

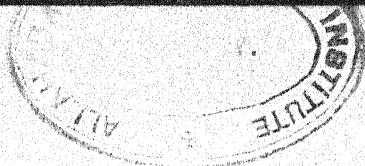
We are not running ideal schools under ideal conditions. We must meet life and school situations as they are, with all of the conditions that hamper ; as, lack of knowledge and vision on our own part, lack of broad outlook on the part of the child, lack of materials to work with and lack of experience when we begin to use these new methods of progressive education. All we can do is to begin at once the use of the project principle. It will transform the school, and will do it *gradually*.

The teacher who succeeds best with the project method is the one who knows clearly the educational needs of his pupils. If he has in his mind a clear standard of the skills and knowledge the pupils ought to acquire that year, he will be able to guide the execution of their projects so that they will be related to practical needs. What should these standards be ?

1. There should be certain minimum essentials for the year's work and of practical

purposes in most schools at present, the course of study in the Government code should be accepted as this minimum requirement. Many projects which have been used in Indian schools have held the interest of pupils for the full year, and at the same time, there have grown out of the project motives for learning 25% to 750% of the requirements of the Government course of study. The experience of teachers who have honestly tried this method has been that the required subject-matter has been covered with no great difficulty.

But this is a matter of planning. It means forethought on the part of the teacher. It is made possible and thoroughly successful through careful planning by the class at the outset and frequent discussions in the class, led by the teacher, as to the further organization and development of the project. The teacher will be constantly searching for reading matter, within the range of the reading ability of the class, that gives information useful in the project. A real need will be found during their work for solving certain arithmetic problems which also give practice in some of the arithmetic required in the course of study. At various stages of the activity, necessary



geography will be related to what the pupils *want* to find out. History will naturally be a part of the project. What a fascinating historical study grows out of a river project, when life on rivers or house-boats is studied, and the development of homes, from primitive caves to modern bungalows, is traced! A lumber project naturally arouses interest in the uses of wood in the past and present. The teacher of a Middle class told me enthusiastically that his boys in their Health Project were relating the dates of the rulers of India to the dates when various forms of medical practice were introduced into this country. Problems in Hygiene and Drawing and other subjects are constantly arising in most projects.

All of this takes planning and organizing. In the higher classes it is interesting and helpful for pupils themselves to know the course of study in the Government code for their school. The older pupils will then help to plan the project and sub-projects which are related to these requirements.

Here a word of warning is necessary. Do not stretch a project too far. The project method is not a method of correlation. Even with the best organization of the subject-matter



learnt through purposeful activities, all of the present required course of study cannot be developed out of one project. Some projects, of course, are more fruitful than others. Some teachers are more successful in developing subject-matter out of the activity and some pupils have larger experience in life and so can accomplish more. Experience with this kind of school work, by pupils as well as the teacher, will lead to the opening of more possibilities for its usefulness. But there is always a large body of the course of study that will have to be learnt in addition to the project work, as long as we accept the requirement of the Government code as the minimum essentials for the school year. This will not be so difficult as it sounds, for in the project school, the class-room is so much a place of lively activity, and the pupils are so keenly interested in school and study, that much of their interest carries over even to that study not directly related to their chosen activities. Consequently this more formal study is also mastered more quickly and thoroughly than in the traditional school.

2. But we should not be easily satisfied with covering the Government requirements. Much more than the minimum essentials of



the syllabus is necessary for all children. How little there is in our courses of study, of information on hygiene and the building of health habits, of knowledge of Indian arts and music! How little is included in those means of education that have to do with character training! How little will a pupil following merely the Government course of study acquire of an appreciation of Indian arts and crafts! But many of these things will be included in an education controlled by the project principle.

3. The teacher's standards should be even higher than these practical requirements for the average child. He should expect some pupils to attain wider knowledge, habits of independent study, a higher grade of skill, an inquiring mind, love of the beautiful.

Pupils may roughly be divided into three classes:

(a) Those of very limited ability. For them the mastery of the Government course of study, that is, minimum essentials, is about all that can be expected.

For the average pupil more practical knowledge than is in the formal course, should be added.

(c) There are always in a class superior pupils who are able to do much more than carry on the work of the average pupil. These should cover a greatly enriched curriculum.

The teacher must bear these three groups in mind and must keep as his standard the fullest development possible of each pupil according to his individual capacity. The minimum essentials must be learned by all. But to those who have the ability—and this develops through the teacher's belief in the pupil and his own vision—there will be a richer life and more varied learning. The project principle opens the door into abundant life.

*To Do.*

Make an outline of geography which might be learned through a Post Office project.

## CHAPTER XXIX.

*To Think About.*

Think of the best teachers you had in childhood. What were the main reasons for their success ?

## THE TEACHER'S SPIRIT.

The teacher must exalt his profession. He must believe in its importance, and joy in its privileges. The calling of the teacher is one of the noblest professions to which a man or woman can devote a life. The spirit that actuates the teacher must be right if success and happiness for teacher and pupil are to result from the experience of school life.

Probably the first essential for successful teaching is that the teacher should be really interested in children. He must be willing to listen to them, must trust them, must believe in the worth of their ideas, must live with them, play with them and grow with them. The true teacher must have the spirit of the true Guru, wanting to be with his pupils constantly and loving them as his own. Their joys and their sorrows must be his joys and sorrows. He must wish for them what he wishes for himself, in the noblest and best sense. The

highest expression of progressive education has been said to be, "He that saveth his life shall lose it, but he that loseth his life shall save it." So the teacher must sacrifice himself that his pupils may live more abundantly. The teacher who considers that his duty is over with the ringing of the school dismissal bell cannot have the spirit of the true Guru. Obviously, also, failure can be expected from the teacher who reaches the class-room after the pupils or who arrives half prepared.

This suggests another essential—diligence. There is no hope for success for the teacher in progressive education who is lazy. The best method, like the best tools, can produce only inferior results in the hands of the lazy, careless person. A lecturer on new methods of education was addressing a club for teachers.

Towards the end of her very stimulating address, she asked if there were any questions from her hearers. One teacher said, "This sounds very interesting. But it does seem to me that these new methods make the teacher's work much harder."

The reply of the lecturer was, "If you are looking for a way to make the work of teaching easier, I have no message for you."

The desire to teach well is a first requisite in learning to teach well. The teacher must be ever seeking and learning and reaching out to conquer new worlds. He must be eager in his own pursuit of knowledge if he is to be ready to help the pupils in whatever way help may be needed. "Those who are looking for a plan which poor teachers can follow and produce satisfactory results are doomed to failure." The better the teacher and the more thorough the preparation, the better will be the project lesson.

The project principle of teaching does not promise additional hours of rest and leisure for the teacher; but it does offer the hope of a happy class-room where children live and love and grow, and a relation between teacher and pupil where the teacher is respected and looked up to as the friend and guide, where the so called methods of instruction become avenues of life, opening to new vistas of vision and growth; where pupils are learning to think and see life in real perspective.

*To Do.*

Make a list of the qualities and abilities essential for a good teacher in the project method.

## CHAPTER XXX.

*To Think About.*

What is your opinion about the place and influence of the principle of learning through purposeful activity in Indian education ?

What would happen in your school if all teachers were controlled by this principle ?

CREATIVE ACTIVITY IN INDIAN  
EDUCATION.

## SUMMARY.

The principle that we learn best by doing is not a new, unproven theory. It has been so long recognized in practical life that it has become a truism. The best teachers of the past used this principle in their teaching, though they never heard it called by the name "project method." This method is only new in the sense that modern psychological research, in studying what are the best conditions under which the mind learns and longest retains the matter learned, have given us certain laws, which applied make up the philosophy of the project method. These are now made

available for all. What was used by great teachers because they were great, has now been worked into a philosophy, a principle that is made available for the mass of teachers.

A growing number of teachers in India are striving to bring their methods of teaching into accord with this philosophy of method. They have acquired a new conception of the opportunities and privileges of the teacher's work. They have acquired a new belief in the abilities of children to undertake and carry through whole-hearted, purposeful activities. They have caught a new vision of the school as the generator of initiative, efficient thinking, and creative service.

These teachers, at first timidly, then with growing confidence and success, have begun to teach through experience, and expect their pupils to learn through experience. By observing them and working with them, they have come to believe more firmly that children learn best when they desire what they are to learn and that a sense of satisfaction and success is a necessary condition of learning. They have found that by encouraging their pupils to undertake, in school, activities which the pupils themselves choose,



and by guiding them in carrying out these projects, they can teach most effectively and economically. These teachers have come gradually to give up the old rote-learning method, and use more and more in their teaching the better method of "projects," i.e., "units of whole-hearted purposeful activity, carried on preferably in their natural setting."

In this book you have read of no less than 92 such units of activity actually carried out in Indian schools by progressive teachers. You cannot copy any of these projects, for the essence of a good project is its spontaneity ; but you can be encouraged by seeing the great variety that may be helpfully chosen by pupils. You have seen through these experiences the strong points of the project method. It relates the school to life, and education to actual conditions. It trains individuals and groups to develop strong purposes. It trains them to work together, to be strong, responsible persons and to have forethought and judgment.

It is not easy to teach by the project method. Each teacher must work out from his own experience the best way to use these principles. The suggestions on technique,

given from the experience of progressive teachers in India, should be helpful. Many have found the advice given by Dr. Kilpatrick, to begin by giving a single period to freely chosen activities, quite practical. The teacher should manage carefully so that the class gain the maximum educational values from forming strong purposes, from making their plans and carrying them out, and from judging the results of their experience. The teacher should not neglect the opportunities that occur to relate the facts and experiences of the project to larger bodies of knowledge. Ingenuity will have to be exercised by the teacher to insure that useful facts and valuable habits may be firmly established and retained. Teaching by the project method requires common sense and resourcefulness.

The teacher must learn to be a real guide and friend to the children. He must think out clearly the aims and standards which the pupils can attain. He will allow projects to develop naturally; and will not stretch them to force an artificial correlation of subject-matter. At the present time, in most Indian schools, teachers may be able to use the project method only incompletely. But they can use the project principle more and more in

their teaching, and it will gradually transform them and their schools. If the teacher has the spirit of the true Guru, he will find great interest and encouragement in exploring the possibilities of this natural method of learning and teaching. The true teacher will gain joy and satisfaction from helping children to grow through experience and activity.

*To Do.*

What kind of a teacher do you mean to be? Write out a series of resolutions for your future guidance.

## CHAPTER XXXI.

*To Think About.*

In what ways can teachers serve their country ?

## SERVING THE MOTHERLAND THROUGH TEACHING.

What kind of citizens the future generation of India are to be, lies largely in the hands of the school teachers. Yours is a coveted opportunity. These young minds which are to be guided and these young feet which are to be led will be the citizens of the future. The true teachers who help youth to grow into intelligent members of the nation are rendering inestimable service to their Motherland.

What are to be your ideals as teachers ? Are you content to follow in the beaten paths, to take the line of least resistance, to do the thing that comes easiest ; or are you prepared to be pioneers to find a more heroic way, to open new paths because you are convinced that they lead to the best goal ? Is the teaching you will give only for the purpose of imparting some information, and assist as many pupils as possible to pass examinations, or is

your purpose to develop citizens who can take their places fully and helpfully in the new day in India. Mr. Sanderson, whom I have several times quoted, said again, "The first purpose of the school is to join in work for the community, and be closely connected with the community life, and so send forth workers into the national life. There is a wide field for urgent research, upon which the health development, and even safety of the nations will depend."\*

If this service of the nation is what you desire, then you must give opportunity for pupils to act as citizens in the school. They must *practise* the qualities of good citizenship every day and the class-room must afford opportunities for this practice.

What does India need ? What are these qualities of good citizens that should be developed in the new generation ? Good citizens must be able to reason and think correctly. They should learn to carry responsibility. They should be truly independent, learning to rely on their own initiative and be dependable. They should co-operate and work for united purposes. A true spirit of democracy and equality should become second

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\* Sanderson of Oundle—MacMillan, pp.28 -288.

nature to them. They should learn tolerance for differences of religious belief and practice. Good health habits and public sanitation must be practised by them and their children. They should understand animals and know how to care for them properly. They should have the habit of helping all who need help. A spirit of service rather than dominance should grow out of the education given to them.

These are some of the qualities that should result from teaching according to the principles presented in this book. In the study of these chapters you will find the relation of these traits of character to various types of activities in school. If these activities are guided by teachers who love and understand children, a new day must come in India.

But project teaching is not easy. It requires teachers of vision, of willingness to work hard, of something of the heroic, to lead in these methods. The reward, however, for study of children, daily preparation, and persistent effort is the knowledge that we are helping in a movement that holds great promise for India.

*To Do.*

Begin to teach by means of "whole-hearted purposeful activities."